AMERICAN
JOURNAL OF SURGERY

Vol. XX MARCH, 1906 No. 3

Original Articles.

AN OPERATION FOR CLEFT PALATE.

By H. L. SMITH, M.D.,
NASHUA, N. H.

Some years ago I was consulted by the parents of a boy, then eleven years of age, who had been operated upon some time previously for a congenital cleft of the palate. The divided velum had united firmly, but there was an entire lack of union in the anterior half of the cleft. Instead of being flexible and voluminous enough to serve its proper function in deglutition and speech, the reunited velum was thick, dense, and rigid, and the condition of the patient was certainly no better than before operation.

When considering what surgical procedure could be employed to afford relief in this case, I asked myself the question: If this defect were met with elsewhere in the body, how would it be repaired? Obviously, the most simple and generally satisfactory method would be to turn in lateral flaps. This I therefore did, and without difficulty, and as a result it was found that not only was it an easy matter to close the cleft in the hard palate, but that the whole of that portion of the palate which had been successfully sutured could be carried bodily backward until it lost a large part of its denseness and approximated very closely the appearance and condition of a normal velum. This rather unexpected result led me to review somewhat thoroughly the whole subject of palatal defects and their relief by surgical means, with the result that I was led to apply the same principle as a primary operation. The experience has been entirely satisfactory. In no case has there been any difficulty in obtaining direct union of the flaps, and in every case the functional result has been surprisingly good.

I have become convinced, during the course of these studies, that the operation, as usually performed, even if successful, surgically speaking, is far from being so from the standpoint of the patient and his friends. I shall therefore ask you to consider briefly the theoretical side of the subject, and then I shall describe the procedure which I have been led to employ and which appears to me to afford certain elements of novelty.

The real object of any operation undertaken for the relief of cleft palate must be to restore normal voice; anything short of this will be more or less unsatisfactory, even though by the closure of the cleft we improve the breathing and swallowing, and thus render more nearly normal the condition of the nasal mucous membrane. As has been previously pointed out by the writer,* to insure normal speech we must have a velum palati sufficiently voluminous, and so thoroughly under the control of its own intrinsic muscles as to make it possible to close the nasopharyngeal passage, and to give a flexible arched roof posteriorly which can be instantly and freely modified to meet the requirements of exact articulation. This closure is obtained not merely by a valve action of the velum, but by a sort of modified sphincter action, in which the superior muscles of the pharynx as well as those of the palate take an active part. It is, then, by no means sufficient merely to secure physical union of the freshened edges, although this in itself is not at all easy, even by the most improved methods and in the most favorable cases. The amount of tissue at our disposal is oftentimes so scanty, owing to the width of the defect, and so much must be sacrificed in paring the edges, that barely enough material is left to bridge the chasm. Though the surgeon's elation may be great as he finds that union is complete, and that, technically considered, the cosmetic result is well nigh perfect, his satisfaction is but too often short-lived when he discovers that the important function of distinct and pleasing articulation is not restored. Perhaps there is no other problem of plastic surgery which equals this in difficulty. Many and varied, complicated and ingenious have been the devices suggested to meet the requirements of the problem. None, however, has been thoroughly satisfactory, because, as I believe, they have been undertaken from an erroneous conception of the end to be achieved and a failure to recognize the absolute necessity, not merely of clos-

* *Boston Medical and Surgical Journal*, May 16, 1895.

ing the cleft, but of obtaining such a freely movable and abundant velum as has been described.

By adopting one, and perhaps several in conjunction, of the well-understood methods devised for relieving tension, whether by lateral incisions forming muco-periosteal flaps, or by the tenotomy of individual muscles, etc., any skilful surgeon can so free his flaps as to render the union of the edges fairly certain, but to create a new velum which shall be in reality such an one as is absolutely necessary for functional restoration of the voice where there is but little of the original tissue remaining—that indeed is a problem not easy of solution.

Of course, one must meet cases where it is plainly an utter impossibility. In such an instance the artificial obturator, as now perfected by the specialist in dental surgery, is the only means that offers itself for relief. The ingenious appliances which are invented for this purpose are extremely useful, and it is not to be wondered at, when we consider the generally poor functional results of operative measures, that some authorities have been led entirely to discard the operation in favor of the appliance; on the other hand, no one will deny that, with equally satisfactory results so far as restoration of normal speech is concerned, an operation would be far preferable to any artificial makeshift.

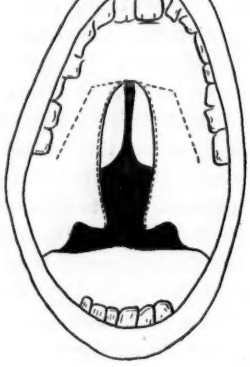


Fig. 1.

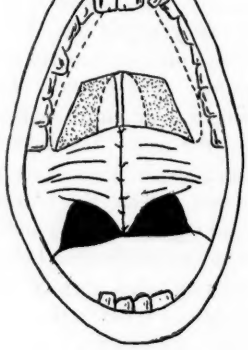


Fig. 2.

The procedure adopted by the writer, which has for its purpose not merely closure of the cleft, but the actual production of a new muscular velum, is intended to fulfil all the necessary requirements as regards deglutition and voice production. In the cases so far operated upon, now ten in number, it has proven satisfactory. Whether it will in the future be generally approved, only a wider experience under varied conditions can decide.

Assuming that the separation is of moderate width, and extends about halfway through the bony palate, the operation is done as follows: From the anterior end of the cleft an incision is made, running outward and a little backward toward the alveolus, about one-third the distance to the teeth, when the direction of the incision is changed so that it is carried in a straight line nearly to the posterior extremity of the alveolar process. The point at which this incision ends depends somewhat upon the case, care being taken that there is left sufficient tissue for the blood supply of the flap. A corresponding incision having been made upon the opposite side, the two flaps thus outlined are dissected up from the bone, the periosteum being included, and are freed completely from the posterior edge of the palate bones behind. (Fig. 1.) This last act is very important, as only thus can the velum be really carried backward and so lengthened. An incision is now made on each side, beginning at the point, near the last molar, where the preceding incisions terminated, and running along in a curve, close to the roots of the teeth, as far forward as is necessary, or as is deemed safe, sufficient space being left in front for the nourishment of the flaps. This cut will usually terminate near the lateral incisors. (Fig. 2.) There are thus formed two triangular flaps, composed of mucous membrane and periosteum, which are carried into the median line and sutured together. The freshened edges of the velum are now sutured, and the posterior edges of the anterior flaps are sewn to the middle of the newly-formed velum. (Fig. 3.) If deemed best, tension can still further be guarded against by extra sutures placed in the velum, at some distance from the edge. In case there seems danger that the palate may be carried too far forward during the process of repair, through contraction of the flaps, it has seemed to the writer

quite feasible to pass a suture through the periosteum at the posterior edge of the palate bones, and thus anchor the velum at the desired point. In all cases that have been done by the above method there has been no difficulty whatever in obtaining union throughout by first intention, this satisfactory result being due in large measure, apparently, to the entire lack of tension.

In case the cleft extends forward to the incisor teeth, the same principle, somewhat modified, will be found easily applicable. (Fig. 4.)

All the operations were performed in the semi-upright position, and with ether narcosis. No great amount of hemorrhage was met with when the incisions were made, slight pressure easily controlling

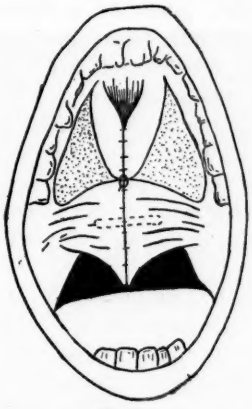


Fig. 3.

it. An ordinary mouth-gag was used, the tongue-depressor being sometimes necesssary. The wire sutures were pulled through the flaps by means of loops of silk thread attached to long-handled curved needles. Hot salt solution was used as a mouth-wash, and the patients were encouraged to drink milk and to take as much as possible of other liquid and semi-liquid foods.

The bone left bare by the turning of the flaps becomes covered with swollen tissue and granulations within a few days, and gives no trouble whatever. A considerable fold of tissue is left in the middle of the roof of the mouth, and just how far this will be flattened down time alone can tell. I do not think it will be of any disadvantage, unless possibly in fitting an artificial denture.

Much might be written about the exercises, vocal and other, which should be employed after the operation. All those acts which require closing off of the nasal space from the mouth are the most important. Among these are the blowing out of a candle by a strong puff of the breath, the blowing of a lead pencil or similar object forcibly from the lips, etc.

As to the age at which intervention should be advised, it seems to me that it should be in all cases before the child has learned to talk—at any rate, before the second year, and preferably soon after completion of the first year. Of course, if undertaken too early, there is a danger that the tender tissues will not bear the necessary manipulation and sutures may cut out, but as the operation here described does away almost entirely with the tension that was the bugbear of previous methods, we may safely operate at an age much earlier than was formerly considered justifiable. Articulation is so largely a matter of habit, and faults of speech are so difficult to overcome, even in normal persons, that operative intervention should be inaugurated, if pos-

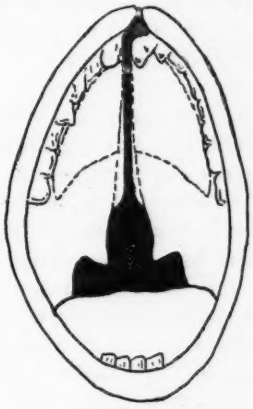


Fig. 4.

sible, before the child has acquired those bad habits that are sure to be present in cases of congenital cleft.

CERVICAL RIB.

Cervical rib is not a common abnormality, but it occurs with sufficient frequency to be worthy of consideration when dealing with a circulatory or nervous trouble in the arms. It is obvious that the trouble may be bilateral, though most of the cases so far reported have been unilateral. There may be a cervical rib on both sides, one of which causes trouble, while the other does not; or, again, the rib may be unilateral. The detection of a cervical rib by palpation is not easy, particularly if it be bilateral, and there is no opportunity to compare the two sides. In thin persons it is not so difficult, but in stout persons it may be practically impossible to feel the rib. A good skiagraph ought to reveal the condition. A valuable hint is afforded by putting the arm in different positions, or interrogating the patient as to whether the holding of the arm in a certain way affords some measure of relief.—*Medicine.*

OBSERVATIONS ON KEETLEY'S OPERATION FOR UNDESCENDED TESTIS; WITH REPORT OF A CASE* (BILATERAL).

By WALTER M. BRICKNER, M.D.,
Chief of Surgical Department, Mount Sinai Hospital Dispensary,
NEW YORK.

Enough has been shown to teach the wisdom of bringing an undescended testicle into its proper place, not only because, incompletely descended, it may be subject to attacks of pain, by torsion or otherwise, and may undergo malignant degeneration, but also because of the moral effect of the procedure upon the individual and because the weight of evidence seems to indicate that its emplacement within the scrotum favors the functional development of the testicle.

The operation ordinarily undertaken for undescended testis fails in a very large percentage of the cases to keep the organ in place, and even though it be stitched to the bottom of the scrotum, the retracting cord will draw it up again, pulling the scrotum with it. In some cases the testicle retracts above the scrotum, even into the inguinal canal. To prevent this amount of relapse, various operations have been devised to narrow the exit of the canal. The "neck-tie operation" of Carl Beck[1] is such an one. But these are not enough. All other considerations aside, the moral effect upon the individual of a misplaced testicle is enough to emphasize the importance of adopting a procedure that will exercise traction on the cord structures long enough to give promise that the testis will remain thereafter within the scrotal pouch.

In 1902 Katzenstein[2] reported a case in which he made an opening in the scrotum and, through it, stitched the testicle to the inner surface of a pedunculated skin flap, made from the inner aspect of the corresponding thigh and sewed at its edge to the wound in the scrotum. The pedicle was subsequently divided and the flap transplanted to the bottom of the scrotum. In the same year Parker[3] attached a suture to the lower pole of the testicle, passed it through the scrotum and fastened it, by transfixion, to the skin of the corresponding thigh; and Annandale[4] adopted the same procedure, except that, evidently to exercise traction in the line of the inguinal canal, he fastened the suture to the opposite thigh. Apparently without knowledge of their reports, Lanz[5] described three years later, as an "elastic extension operation," a very similar device. Through a buttonhole incision in the scrotum he attached to the gubernaculum testis one end of a catgut loop. The other end he fastened with adhesive plaster to the corresponding thigh, or to a crossbar bandaged between the separated thighs. In some cases he used a rubber band, instead of the catgut, and fastened it to the tunica albuginea itself.

Neither in the reports of any of these surgeons nor in the more extended study of Odiorne and Simmons[6] is there any reference to the far more elegant and more surgical method demonstrated by C. B. Keetley[7] in 1894. No doubt this was because the only published accounts of his operation were in the reports of the meeting of the Medical Society of London at which he showed two cases. Recently, however, Keetley published a description of his method of "Temporary Fixation of the Testis to the Thigh"[8] and reported twenty-five cases, covering a period of ten years or more, upon which he had employed his operation with satisfactory results. Of these twenty-five cases of undescended testicle, five were bilateral, and of these five, in some (Keetley does not say how many), both sides were operated upon at the same time, and in the others at different times.

Keetley's method is sufficiently described in the report of the following case:

M. L., a healthy and otherwise normal boy of five, was last fall brought to me by his parents, whose attention had been directed by a physician to the fact that the child's scrotum was empty of testicle on both sides. The testes could be "milked" from the inguinal canals, within which they probably lay, into, but not to the bottom of, the scrotum. Upon releasing them they slipped back, however. The right testicle was scarcely larger than a pea; the left one was of fair size. Both external inguinal rings were unusually large, but there was no evidence of a hernia on either side. While in the course of another few years the testicles might, with the help of manipulation, descend still further, the large size of the rings and the small size of the right testicle led me to advise an operation.

Operation, November 21, 1905, at Mount Sinai Hospital: An incision about four cm. in length was made over the course of the right inguinal canal. The aponeurosis of the external oblique was divided and retracted, exposing the canal and, within it, the testicle and the cord structures. By blunt dissection the cord was easily mobilized, and thus "lengthened," throughout the extent of the canal, and as far back as the peritoneum itself. Care was taken in these manipulations to preserve the gubernaculum testis, which was finally divided as far as possible from the

* Presented before the Surgical Section of the New York Academy of Medicine, January 5, 1906.

testicle, viz., near the pillars of the external ring. It was found that the testicle could now easily be brought down to the level of the bottom of the scrotum. (It is interesting to note that in all of Keetley's cases, even those in which the testicle was wholly intra-abdominal, he was able, at this stage of the operation, by traction on the gubernaculum, to bring the organ down, without undue tension, to the fascia lata.)

To enlarge the scrotal pouch, the left forefinger was now thrust through its neck to the fundus. At this point a longitudinal incision of about 1.5 cm. was made from the outside. As advised by Keetley, a dressing forceps was at once thrust through this wound, to prevent displacement of the layers of the

Fig. 1.—M. L. before operation.

scrotal tissue. A long strand of catgut was temporarily fastened to the gubernaculum and brought out through the opening in the scrotum. This traction stitch, not described in Keetley's technic, was to allow free manipulation of the cord when the canal was being closed, while also providing an easy means of drawing the testicle well down after that step was completed.

The canal was then reconstructed according to Bassini's method of inguinal herniotomy, chromicized catgut being employed. Directly opposite the wound in the bottom of the scrotum a longitudinal incision, of the same length, was made in the thigh, and the fascia lata beneath was exposed. The posterior lips of the scrotal and thigh incisions were next united by interrupted silk sutures (Keetley uses a running silkworm-gut stitch). By means of the traction thread of catgut the testicle was then made to present at the scrotal wound. Two or three fine chromicized catgut stitches were passed through the fascia lata and through the gubernaculum very close to the testis. The traction stitch was then discarded and the anterior lips of the scrotal and thigh wounds were sutured together with silk. In this manner a canal of skin was manufactured, within which lay the testicle fastened to the fascia of the thigh.

The same operation was then performed on the left side. Here a slender process of the peritoneum could be traced along the cord, but the entire thickness of the cord structures being no more than that of a small goose quill, it was deemed technically inadvisable to attempt to dissect up and tie off this tiny sac. As on the right side, however, there was no

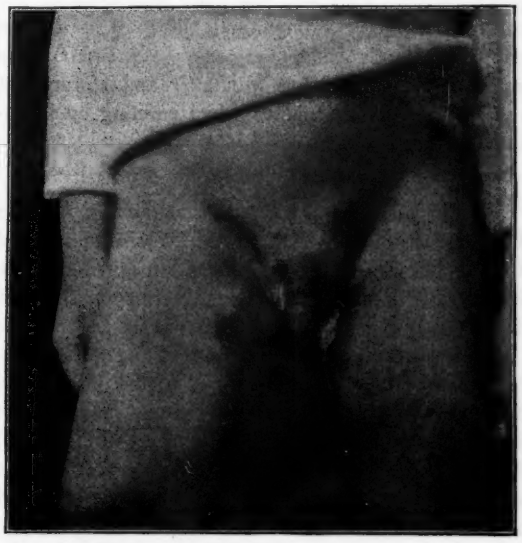


Fig. 2.—M. L. one month after operation.

hernia. Being already drawn over towards the right thigh, it was, of course, impossible to bring the *bottom* of the scrotum on the left side in contact with the inner aspect of the left thigh. Accordingly, the left testicle had to be attached at a point somewhat higher up. Even then some tension was evident.

At the first dressing, on the seventh day, the inguinal incisions were found healed *per primam*. The thigh-scrotal wounds, however, showed a tendency to stretch and one of the silk stitches on the right side had torn out. Slight movements of the thighs during the dressing gave evidence that the tension on the scrotum might subsequently prove an embarrassment in locomotion. To prevent, if possible, any further stretching, the knees were thereafter bandaged together. In spite of this precaution, however, the second and third dressings showed the thigh-scrotal wounds gaping still more. Accordingly, their edges were freshened and reunited with heavier stitches of silk. This proved only in part

effectual. The scrotal attachment on the *right* side (very small testicle at bottom of scrotum) continued to yield more and more and finally separated altogether—a sacrifice cheerfully allowed, however, for the *left* side (normal sized testicle, not quite at bottom of scrotum) united kindly, with only a small gaping spot, which healed by granulation.

At the present writing, however (two and one-half months after the operation) the right testicle has not receded at all. On the left side, encouraged, no doubt, by the undue tension, the gubernaculum has stretched a little so that the testicle itself is distant from the thigh about the width of the index finger. This will make the separation of the scrotum from the extremity, which will be done a couple of months hence, very easy (*vide infra*). The child has no discomfort whatever and suffers not the slightest inconvenience when running or jumping.

EPICRISIS.

Keetley's *Temporary Fixation to the Thigh* is the best operation thus far devised for undescended testicle. It is surgical in conception and simple in execution. It affords constant traction on the cord for as long a period as may be desired.

Keetley recommends stitching of the gubernaculum, rather than of the testicle, to the fascia lata, for the reason that the former tissue stretches more or less and thus makes the subsequent liberation of the organ a very minor procedure, rather than a matter of dissection. Since the gubernaculum may stretch unduly, however, it may be better to forego this advantage, and suture the tunica albuginea itself to the fascia lata.

If the single case here described may be taken as a guide, it is unwise, when the condition is bilateral, to attempt the operation on both sides, in small children, whose scrotal tissues are scant. Concerning the few cryptorchids upon whom Keetley operated on both sides at one sitting, he makes no mention of undue tension. Probably they were adults, with more abundant scrotum. Even in adults, however, it would appear better to operate in two sittings (attaching one testicle when the other one is liberated), for the reason that it is obviously impossible to fasten to the thighs the fundus of the scrotum on *both* sides, at the same time.

REFERENCES.

[1] Beck: *Medical Record*, August 12, 1905.
[2] Katzenstein: *Deutsche Medizinische Wochenschrift*, 1902, Vol. XXVIII., p. 937.
[3] Parker: *British Medical Journal*, 1902, 2, p. 1316 (society report).
[4] Annandale: *British Medical Journal*, 1902, p. 1952 (society report).
[5] Lanz: *Zentralblatt für Chirurgie*, April 22, 1905.
[6] Odiorne and Simmons: *Annals of Surgery*, 1904, Vol. XL., p. 962.
[7] Keetley: *Transactions of the Medical Society of London*, Vol. XVII., p. 349; *Lancet*, April 21, 1894.
[8] Keetley: *Lancet*, July 29, 1905.

30 WEST NINETY-SECOND STREET.

THE SURGICAL TREATMENT OF OBSTINATE DYSPEPSIA.

By WILLIAM FRANCIS CAMPBELL, M.D.,
BROOKLYN, NEW YORK.

Professor of Anatomy, Long Island College Hospital; Surgeon to Bushwick and Swedish Hospitals; Assistant Surgeon, Kings County, St. John's and Long Island College Hospitals; Consulting Surgeon, Jamaica Hospital.

The use of the term *dyspepsia* cannot be defended on the ground of scientific accuracy. It is an inclusive term, it refers to a symptom complex, it suggests no anatomical lesion and hence no specific disease. It is used here because of its elasticity, its comprehensiveness, broadly because it refers to impairment of the function of digestion.

It is the writer's purpose to discuss the interdependence and correlation of certain pathological conditions with the symptoms included in the term dyspepsia.

The internist for many years has treated dyspepsia, sometimes with success, often with failure. The chronic cases have often drifted into that large and unfortunate class of neurasthenics—a classification which sometimes satisfies the indolent practitioner and often stigmatizes the real sufferer.

We are learning that alterations in the digestive secretions are not to be treated as primary symptoms, that they are secondary to some definite anatomical lesion, that the mechanism is somewhere impaired, and that only accurate, definite location of the cause will suggest the proper treatment.

The order in which intraperitoneal surgery has progressed shows how the accurate method of surgery has elucidated the inaccuracies of former medical practice. First the pelvis was the center of surgical intervention, and the inefficient local treatment was soon displaced by the removal of the diseased organs. Next the appendix claimed attention, and idiopathic peritonitis was relegated to the medical junk shop. The trend of surgical thought has been from the pelvis toward the diaphragm and now the digestive organs are the special centers of surgical interest.

Some one has said that "the pancreas, liver and ducts, and stomach hang like three apples on a single stem—the duodenum; whatever affects one affects the others." If we would carry the simile further,

and the bough was prolific enough to bear the kidney and the appendix, the analogy would be complete. There is, however, a more accurate and satisfactory explanation of the interdependence of these important organs. They are all definitely connected and anatomically correlated through their nerve supply. From the central solar plexus go a number of subsidiary plexuses, the superior mesenteric, the renal, the coeliac, and through them there is an intimate relation established among the stomach, duodenum, kidney, spleen, pancreas and appendix. Irritation in any of these organs can be reflected in the others.

The duodenum is "the central chamber of the digestive apparatus," as it is the center of diagnostic difficulty.

Into the duodenum empties the stomach, the bile duct, the pancreatic duct; behind it lies the right kidney, below it the appendix; and all are connected through their nerve supply.

During the past year the writer has attempted with some degree of accuracy to analyze the cases of chronic dyspepsia which he has been permitted to see and submits the results of surgical intervention for consideration.

The relation of chronic appendicitis to obstinate dyspepsia.

CASE I. Miss M., school teacher, age 31. Suffered for two years with periodical headaches followed by nausea and epigastric pain, capricious appetite, constipation, mental depression. Examination showed size and situation of stomach normal, no evidence of stasis, secretions normal. Upon deep pressure in the right iliac fossa there is tenderness and a thickened appendix is felt.

Operation: An adherent and greatly thickened appendix, the seat of chronic inflammation, was removed. The result was entirely satisfactory. Patient reports that she enjoys perfect health.

CASE II. Miss C., aged 19. No history of previous disease. Four years ago had some slight attacks of epigastric pain; one of these was rather severe, and the pain radiated through to the back and right shoulder. Appetite became capricious. She could not eat sweets, fruits, nuts or pastry of any kind without a feeling of discomfort and an excessive secretion of saliva. There followed loss of flesh, constipation and some mental depression. Three years ago she had a sudden and severe attack of pain in the right iliac fossa, with great tenderness. This attack subsided and was followed by another in January, 1905, presenting the same symptoms.

Examination showed size of stomach normal and secretions normal; right kidney movable; tenderness in the right iliac fossa; appendix not palpable.

In March the appendix was removed. It showed evidence of chronic inflammation. This patient was seen a week ago. She reports that the symptoms have disappeared and she has gained ten pounds in weight.

CASE III. Mrs. R., age 27, married three years, no children. Four years ago had a severe attack of pain in the right iliac fossa which kept her confined to her bed for three days. Three years ago she had an attack of "acute indigestion"—severe epigastric pain followed by nausea and vomiting. Since then she has had pain after eating and a feeling of fullness, flatulency, nausea and constipation. There have been loss of flesh and some mental depression.

Examination showed patient badly nourished, neurotic, a typical neurasthenic; movable right kidney; tenderness in right iliac fossa on deep pressure; stomach normal in size and secretion; no evidence of stasis.

The appendix was removed in October. It was thickened and adherent to the cecum. Patient has been relieved of her symptoms and feels perfectly well.

The above cases are cited to show how the appendix is the anatomical cause of many cases of chronic dyspepsia and that its removal restores the patient to normal health.

A common cause of digestive disorders is *infection in the bile passages*, not necessarily gall stones for they are but the results of a previous infection, not necessarily the gall bladder for it is but a subsidiary portion of the gall tract.

Mumford has well traced the "vicious circle" in the gall tract. The links in the chain are infection, congestion, stagnation, precipitation (cholesterin) and stone formation, and from the presence of stone come irritation, lowered vital resistance, further bacterial invasion, more precipitation, and further formation of stones, and so the process proceeds.

There are many cases benefited by operation in which no stones are found. Drainage is the important factor and it will cure many cases where the symptoms of digestive disorder are associated with catarrhal conditions in the bile tract. Many of these patients are of the "bilious" type. Their symptoms run over a considerable period. They have long suffered from loss of appetite, distress after eating, flatulence, constipation and malnutrition.

CASE IV. Mrs. W., age 45. Suffered for past two years from distress after eating. Occasional pains in the epigastrium, flatulence, constipation, occasional attacks of pain in region of gall bladder radiating to the right scapula, and slight jaundice.

Examination showed size of stomach normal, secretions normal, no evidence of stasis. There was marked tenderness over the gall-bladder.

At operation the gall tract was exposed and examined. No evidence of stone. The gall bladder was opened and found to contain thick, ropy mucus. Drainage was established and drain removed at the end of two weeks. Recovery uneventful. When last seen patient reported that she was free from all symptoms and enjoyed normal health.

CASE V. Mrs. D., age 29. Frail, neurotic type. Had suffered for three years from distress after eating, sometimes nausea and vomiting. There was constant flatulence and constipation. During the last six months she had frequent attacks of severe pain beginning in the epigastrium and referred to the right shoulder. No jaundice.

Examination: The patient is badly nourished, neurotic and mentally depressed. The stomach in size, situation and secretion is normal. There is tenderness over the gall bladder. Leucocyte count, 13,300.

Operation revealed a gall bladder filled with a number of small stones, and in the cystic duct a stone the size of a marble. After removal of the stones, drainage was established and continued for three weeks. Patient left the hospital cured. When seen subsequently she reported that she had no return of symptoms and had gained in weight.

CASE VI. Mrs. U., age 52. Was referred with the diagnosis of a stone in the common duct. The previous history is interesting. She had for many years previous given symptoms of digestive disturbance of a general character, epigastric pain, feeling of fulness after eating, flatulence, constipation and anorexia. There had been several attacks of severe epigastric pain followed by jaundice, which cleared up in a few days.

When the patient entered the hospital she was markedly jaundiced, gave a history of recent severe pain in the gall bladder region, radiating to the right scapula. There was tenderness over the gall bladder and a tumor could be palpated.

About forty stones were removed from the gall bladder. Lodged in the common duct was a stone three-quarters of an inch in diameter. The duct was incised, the stone removed and drainage established. The patient left the hospital cured and has remained free from symptoms to the present time.

To turn our attention to another class of cases, observe the symptoms in

CASE VII. Mrs. S., age 39. Consulted her physician two years ago, complaining of anorexia, fear of eating, headache, nausea, vomiting, flatulency, constipation. Pain appeared from one to two hours after eating. There were marked evidences of malnutrition and mental depression. Patient was a confirmed neurasthenic. Stomach somewhat dilated, evidences of hyperchloridria and stasis.

The following November her physician was called to attend her for gastric hemorrhage. Much blood was vomited, and she passed tarry stools. Eleven months later she was suddenly seized with severe pain, and gave evidence of active hemorrhage, as seen in the vomit and stools. When seen by the writer she seemed almost exsanguinated. The radial pulse was scarcely perceptible. By the use of morphine, adrenalin and hypodermatoclysis the patient recovered.

These symptoms point to an ulcer either near the pylorus or in the duodenum itself. A drainage operation has been advised and is under consideration. Such a procedure will not only relieve this patient, but there is no other treatment from which relief can confidently be expected.

CASE VIII. A woman of twenty-two, single, seen in the clinic of Dr. Bristow. Symptoms extended over a period of two months. Complained of sudden attacks of pain once or twice a day in the epigastrium, radiating to the back and shoulder. After these attacks there were nausea and vomiting. The attacks were excited by certain kinds of food. No examination of the stomach contents was made and the case was thought to be one of cholelithiasis.

At the operation the gall tract was found normal. On the anterior wall of the stomach was felt a small area of thickening. The stomach was opened and an area of erosion was discovered about the size of a five-cent piece. The eroded area was cauterized and the stomach wound closed. The patient was fed for two weeks by rectal enemata and a fluid diet gradually substituted. She recovered with no return of symptoms.

CASE IX. Mrs. M., age 45. Gave a history of gastric disorder extending over fifteen years. During this period she had been operated upon for movable kidney and cystic ovary. She complained of epigastric pain coming on a half hour after eating, sometimes lasting for several hours, boring in character and radiating to the back, and associated with headache, nausea and vomiting. On several occasions she vomited blood and the stools were tarry. She had lost flesh and was highly neurotic. She now abstained from all solid foods, fearing that they would precipitate an attack of pain.

Examination showed the stomach dilated, an excess of hydrochloric acid and some stasis. There was tenderness on pressure over the epigastrium and

the lower border of the stomach and at the level of the umbilicus.

At operation there was found an area of thickening near the pylorus, evidently the seat of chronic ulcer. An anastomosis between the posterior wall of the stomach and the jejunum was made. Patient made an excellent recovery and has since been entirely free from symptoms.

These few cases demonstrate fairly well the benefits which follow the proper surgical treatment of chronic gastric disorders. As we become more accurate in our methods of examination and observation, as we begin to appreciate what we already know, that chronic dyspepsias have a definite anatomical cause, these patients will be given the benefit of operation and the large class of neurasthenics and chronic dyspeptics will be rescued from chronic invalidism and restored to normal health.

THE CHOICE OF SPLINTS FOR HIP DISEASE.*

By EDWIN W. RYERSON, M.D.,

Orthopedic Surgeon to St. Elizabeth's Hospital; Instructor in Orthopedics, Chicago Policlinic.

CHICAGO.

For many years it was the custom to consider tuberculosis of the hip as characterized by three distinct stages, the initial stage, the stage of lengthening, and the stage of shortening. In the light of modern pathology such an arbitrary and purely symptomatic classification is entirely unsatisfactory, and has been abandoned by orthopedic surgeons. It has been proven that practically all cases begin as a small primary tuberculous focus in the upper end of the femur or in the acetabulum, although the possibility of an occasional primary synovial infection cannot be denied. As long as the bone focus remains limited in extent, and does not invade the joint itself, we have a first stage which is definitely marked pathologically, and is characterized clinically by limping, slight spasm of some of the muscles around the joint, more or less limitation of motion, and an afternoon temperature of 99° or more.

If the focus does not remain quiescent, but increases in size, the joint sooner or later is invaded, and a marked exacerbation of the existing symptoms occurs, with night cries, pain along the distribution of the obturator nerve, infection of the synovial tissues, and the presence of tuberculous detritus within the capsule. If the disease be arrested at this stage, it is possible that a complete cure may be attained, with a normal range of motion. If it progress, however, and the articular surfaces of femur and acetabulum become eroded and carious, considerable permanent limitation of motion, and perhaps ankylosis, will be probable. For the sake of simplifying the classification, the third stage may be said to include these extensive bone and cartilage changes, with their final results.

In considering the treatment of the earliest form of the disease, it must be admitted that a recovery without treatment is a possibility, but tuberculosis of bones and joints is generally a malignant process which demands the greatest care and precision in its management. Too much importance cannot be attached to the general constitutional treatment,—diet, fresh air, and sunshine.

It is rarely necessary to confine the patient to bed at the outset, while the symptoms are very mild. Out-of-door life with simple fixation of the joint by a plaster spica or Thomas hip-splint have cured many patients, and in some of these cases weight-bearing on the diseased hip has apparently done no harm. This is probably true only when the focus is in the great trochanter or the neck of the femur, and as we are rarely able to locate the early focus with any degree of accuracy, even by the best of x-ray pictures, the practice of weight-bearing cannot be too strongly discouraged in all instances.

The Thomas splint, then, appears to be a rational treatment when the disease is extra-articular, but even under these circumstances I vastly prefer the additional security of a splint that precludes the possibility of weight-bearing, especially in young and irresponsible children, where the painlessness of the joint is so strong a factor of danger. A splint described by Dr. Ridlon in 1895 is ideal for this purpose. It is a combination of the Thomas hip- and knee-splints, with no provision for traction. When there is but little spasm of the muscles I believe the weight of the leg itself will furnish sufficient traction.

If, however, the hip does badly under simple fixation and protection, and the symptoms increase in severity, or if the case be not seen until general infection of the joint has taken place, I believe that traction is imperative, and that it should be combined with the elements of fixation and protection.

The hip splints of Taylor, Davis, and Sayre, with a single outside upright and the ordinary perineal suspension straps, do not afford sufficient rigidity. They are not constructed upon sound mechanical principles, because the leverage of the long pelvic bands is so great that the body weight tends to bend

* Read before the Chicago Orthopedic Society.

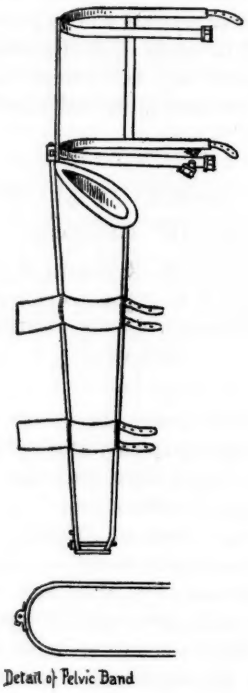
the long upright outward, to approximate the two extremities of the brace; and likewise the weight on the perineal straps pulls the front and rear pelvic bands together. This allows too much up and down motion unless the brace be made so heavy as to be impracticable. Ridlon and Phelps took an important step in advance when they made use of the Thomas ring instead of the inner perineal strap. Phelps appreciated the importance of having the upright on the inner side of the leg, thus getting a direct support for the body-weight and avoiding the outward thrust of a lever as long as the diameter of the Thomas ring.

Dane recognized the mechanical value of the two uprights, inner and outer, and his splint is practically a Thomas knee splint with a pelvic band. The only attempt at fixation in the Davis, Taylor, Sayre and Dane splints is the antero-posterior leverage of the pelvic bands, which act on so short an arm as to be almost valueless inside of a range of ten or fifteen degrees. The traction furnishes a varying amount of fixation, too inconstant to be of great value.

Many surgeons believe that the thoracic extension of the Thomas hip splint does not furnish fixation, and Dane states that it actually causes motion that otherwise would not occur. To solve the question in my own mind I had a Thomas hip splint applied to myself, and found that the fixation was practically complete, and I believe the thoracic attachment to be a most valuable addition to any hip splint, as Phelps and Ridlon long ago pointed out. It is necessary, however, that the upright be close to the spine, and not as in the Ridlon and Phelps splints, in the axillary line. This will prevent the kyphosing of the lumbar spine, although it has no effect upon lordosis.

The ideal hip splint, therefore, should have as a foundation a simple Thomas knee splint; to this should be added the Davis pelvic band, to allow the use of a perineal strap on the well side if adduction is present. On this pelvic band an ordinary Thomas upright and thoracic band should be carrried, the thoracic band being of the same design as the pelvic band. If, however, these pelvic and thoracic attachments be permanently fastened to the lower uprights, it is difficult or impossible to apply the brace, since it involves dragging the patient through three hoops, set at different angles. Dane realized this, although his splint has only the pelvic band, and he devised an ingenious pivoting of the pelvic band, by which it is raised up parallel to the outer upright while the brace is being drawn on, and is then replaced at the proper angle.

This would not be suitable for the combination of pelvic and thoracic bands which I regard as necessary, and I have made use of another method to attain the same end: The upper end of the outside upright is carried an inch above the attachment of the Thomas ring, and is accurately ground. A socket drilled to fit this post is then forged, with short antero-posterior wings to which the pelvic band is riveted at an angle of twenty degrees, to correspond with the average tilt of the pelvis. An upright from this pelvic band supports the thoracic band. This entire upper work thus constitutes a separate part of the brace; it can easily be attached after the lower part has been applied; and it is fixed firmly by a set-screw through the socket. The ordinary windlass is used for traction. I have used this brace in a number of cases with great satisfaction, and when the lower uprights are made of light steel tubing the total weight is not too great for the average patient. In such an apparatus the surgeon can feel certain that the joint is held in practical fixation, that the traction is much more nearly continuous than in any form of splint which uses two perineal straps to support the body-weight, and that the patient cannot grind away any of his diseased joint by weight-bearing.



Detail of Pelvic Band

100 STATE STREET.

THE PRELIMINARY TRAINING OF A SURGEON; A WORD TO YOUNG MEN.

By A. C. BERNAYS, M. D.,
ST. LOUIS.

The problem of the evolution, education or, if you please, of the making of a surgeon is one that has always greatly interested the profession. I am one of those who agree with the view of Osler that the creative, pathfinding or epoch-making ideas come to all men before they are forty years of age, although some may not publish or elaborate them until they are older. I am therefore of the opinion that the making or education of a surgeon should begin early. I am convinced that a silk purse cannot be made out of a sow's ear and I know that the gold must be in the ore, or no process of refinement can possibly evolve or extract it. I know also, however, that young men with very limited training often outstrip some of their fellows who have had great scholastic advantages. There must be something in these untrained men which schools and lessons and other educational factors could not supply. Exactly what this something may be is very hard to say. My opinion, in a few words, is that the aspirant must belong to that type of individual whom Mr. Hadley, the President of Yale College, has called a *fact-seeker*. The young person, male or female, must be one of those whose hands, as well as whose brain, have been educated. I may be better understood if I say, he must be one of those who has learned to use all his five senses. He must be able to arrive at correct conclusions by accurate observation, that is, by the use of his senses. We have recognized that the highest function of a surgeon is to make a diagnosis. The ability to treat disease is entirely dependent on the recognition of the pathological condition. The operator will always rank just next to the diagnostician but can never be considered to stand higher than the diagnostician. It is much to be striven for that both functions be combined in one man, but experience has proven that two can be relied upon better than one alone. It is wise to have two kinds of talent in all obscure cases. Obscure and dangerous cases tend to make us modest, so that the suggestion of calling consultants is more readily accepted than in simple clear cases in which consultations are not only useless but expensive and harmful.

Besides being a man of educated, trained senses, I think the young person taking up the study of surgery should be self-reliant, full of sympathy with mankind, and last, but not least, should have a love for the acquisition of scientific truths. In addition to these basic traits, every quality of mind which goes to make an honorable, cultured gentleman is desirable.

It seems to me that an education in a scientific school, such as Sheffield School, or the Massachusetts Institute of Technology, would fit a young man better for the life work of a surgeon than a college course leading to the A. B. degree. At institutions like those mentioned, physics and chemistry are taught, without which an understanding of biology and physiology is simply impossible.

The education of young gentlemen in America will lead to the making of a better class of surgeons than an early education in Continental Europe or England, in the fashion prevailing at the present day. At country parties in Europe I have seen young gentlemen absolutely helpless in cases of accident. They could neither saddle a horse nor unhitch a team in an emergency, although they were stylish riders and drivers. You must know that the European gentleman has his sons and daughters trained in riding, driving, swimming, shooting, etc., by a teacher from whom they receive lessons in these arts. Our American boy learns these accomplishments by hard experience, which, after all, is the best school. In most cases we learn to shoot, by disobeying our parents, and so it is with other accomplishments of a sporting and athletic character. Our boys are therefore more practical and useful in an emergency and become more resourceful in a surgical operation requiring manual dexterity and a cool head.

Our young man is now ready to enter a medical school and the first year ought to be devoted to anatomy, physiology, embryology and organic chemistry. In the second year he begins pathology and continues histology. During these two years, nearly all his time should be spent in the dissecting room and the laboratories. Having taught anatomy for eighteen years in various medical colleges, I may be permitted a few remarks about the study of this subject. Medical men have always looked upon it as an auxiliary, because upon it is based the art of surgery. Until recent years, our knowledge of anatomy depended upon the dissection of human and other animals. When we look back over the field we are more and more astounded at the enormous number of facts we have learned about the structure of the human and other organized bodies by dissection. Until recently, our knowledge rested on microscopical and macroscopical dissection. Recently the modern science of embryology has given us a more stable and scientific basis for our anatomical work. Suppose you are desirous of investiga-

ting the structure or construction of a complicated machine, for instance, a man-o'-war. Is it not at once clear to you that you can understand its structure much better if you watch the building of such an engine of war, than if you tear one to pieces or dissect one? There can be no doubt about the best method to pursue. Watching the development and construction to its completion of a complicated machine will at once give you an understanding of all its parts and functions, whereas the mere dissection or taking apart of the machine will not give you this understanding, although it will acquaint you with the parts.

Remember that anatomy which is learned by memory is easily forgotten and is often useless, but anatomy which you have grasped by your reason and understanding will last forever. For example, let us take a question in anatomy: Why does the recurrent laryngeal nerve dip down into the chest forming a long loop, around the arch of the aorta on the left and around the subclavian artery on the right, in order to reach its end in the muscles of the larynx which form the voice? A man who has studied embryology at once answers the to him self-evident question, and an anatomist whose knowledge rests on dissection only, cannot answer it at all. Let me therefore caution you again not to depend on anatomy which you have committed to memory, but learn it by the exercise of understanding and of reason. Learn to understand the structure of the body, on which depends your ability to do surgery, by studying its development from the egg stage to completion. Your knowledge of anatomy and of physiology must not depend upon what you read in books; it must be founded on observations made by yourself, by the use of your senses, and by the use of instruments of precision. You can have no scientific knowledge as long as you depend upon the authority of books and lectures. Science abhors authority. It requires demonstration of facts, it believes nothing upon anyone's authority.

But very few hours can be given to didactic lectures. Actual work in the laboratories, repeating the fundamental experiments of biology, is the student's main occupation and this he may vary as much as his inclination or his genius will prompt. It is not at all excluded that the young student may make important modifications of existing methods; indeed, he may make discoveries. He will probably find many facts that are not mentioned in the text-books. These he will at first believe to be discoveries, because he will expect too much from his text-book. But before long, if his work continues on proper lines—and by that I mean continued laboratory study with the aid of a teacher, who is an investigator or researcher—he will soon find out that a text-book is a poor but necessary assistant and guide. He will soon find the text-book a most incomplete and unreliable authority in scientific experiment and research.

In the second two years the student takes up the practical departments, and nearly all his time will be spent in practical courses and in clinics. Again he will consult text-books, but he will have learned that observation at the bedside is his most attractive and most profitable method of study. Attending didactic lectures on surgery and medicine he will find a waste of time, and the brighter students will "cut" these didactic lectures because they learn more at home from a good text-book than from a lecturer. The reason for this may be illustrated by an example. I know a doctor who is a bright, glib talker, but he is a very poor pathologist and only an average surgeon. Nevertheless, he became Professor of Surgery, and I believe still holds that position. He teaches the principles of surgery and I am told he does it to the liking of his hearers. No one will pretend that his lectures will compare at all with Senn's beautiful and clear chapters, but all know that the lectures are simply taken from Senn's book. They are a weak, degenerate and incomplete rehearsal of the text-book. No further argument is needed. His students would gain by studying the text-book and "cutting" the lectures. During the last years, the student will do best to spend all his time in clinical courses. Hospital clinics, obstetrical, psychiatric, orthopedic, in fact all varieties, must daily engage most of his working hours. Only a few hours must be reserved for the reviewing of notes by the aid of text-books.

The student will now be graduated and then comes the most important step in the making of a surgeon. He must become attached to the staff of a hospital or become assistant to a surgeon who has hospital connections, so that he may take part in the daily exercise of the science and art of surgery. Exactly how many years should be thus spent, I cannot say. One, two or three years should suffice to turn out a surgeon who is capable and ready to offer his services to the public with a good prospect of making a useful and a successful diagnostician and operator.*

Before closing this short memorandum on the making or evolution of a surgeon, let me add a few

* Whether or not every man who intends to become a surgeon should do general practise for a year or two will depend on the kind of hospital experience he may have enjoyed. We will admit that a general practise experience can never hurt a surgeon, but we do not deem it necessary in all cases.

more reflections. I do not believe that anyone can become a really good surgeon who does not think of himself that he can perform a resection of the pylorus, a resection of the three branches of the trigeminus or the extirpation of the Gasserian ganglion nearly, or quite as well, as any other surgeon in the country.

Neither do I believe greatness can be achieved in surgery by anyone who does not, during the first five years of his practise, remove some malignant growth from the face or neck of an unfortunate fellow which have been pronounced inoperable by some old and prominent surgeons. It follows that I am of the opinion that surgical technic will continue to improve and that surgery must not be thought a finished art.

Finally, let me say that a great surgeon cannot be recognized by the public. They have no way of judging between a good doctor and a quack, or between a real surgeon and a mere pretender. The cardinal way of judging of a surgeon's work is to see it done and to be allowed to see the final results of the operations. A great surgeon will therefore always be willing to invite colleagues, young ones as well as prominent ones, to witness his operations, to watch his after-treatment and to study his results. An infallible sign of a great surgeon is his willingness not only to show results, but to teach and demonstrate his methods to students and colleagues from any quarter of the globe.

The acquisition of scientific truth for the benefit of mankind, is made as easy and free as the air we breathe, by the great universities. Our rich men, by endowing these institutions, are doing great deeds for their fellowmen of this and of future generations. Great surgeons owe it to mankind to make the *art of surgery* as accessible and free as is the science.

At the conclusion of an operation for abdominal or pelvic adhesions, it is advisable to pour into the seat of operation half to one pint of warm sterile olive oil. The oil remains for a long time, during which period it permits easy sliding of the intestines and prevents adhesions among the viscera from reforming.

V. PLETH, Crookston, Minn.

Lang treats lupus with hot air with good result. A tube from which the hot air comes is held at less than half an inch from the skin, which can support without much pain air of from 200° to 300° C. A yellowish white eschar is at once produced and when this comes away a healthy cicatrix forms.—*Ex.*

PLASTER OF PARIS, AND HOW TO USE IT.

By MARTIN W. WARE, M.D.,
Adjunct Attending Surgeon (Genito-Urinary), Mount Sinai Hospital; Surgeon to the Good Samaritan Dispensary,
NEW YORK.

(*Continued from the February number.*)

FRACTURES OF THE LOWER EXTREMITIES.

GENERAL RULE

Every cast applied for fracture of the hip, thigh, knee, or leg should include the foot in a right-angled position. Failure to do this will cause drop-foot (talipes equinus), which constitutes a hindrance to walking during the time that the cast is in place, and delays walking after its removal. In severe instances, indeed, this drop-foot requires correction and the application of a plaster cast to maintain the proper position.

FRACTURE AT THE HIP JOINT

The use of a plaster cast in fractures of the senile hip is indicated only if it is possible to have the patient walk about on crutches. Other devices are more effective, but at times not applicable, because they necessitate the patient assuming a recumbent position for many weeks, which is apt to cause hypostatic congestion of the lungs. The most effective plaster dressing is that which includes the knee and ankle, enveloping the hip in a spica, the upper limits of which include the ribs below the mammary level.

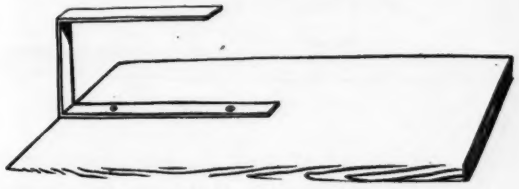


Fig. 16.—Metal hip rest, screwed to board.

PLASTER OF PARIS HIP SPICA

The patient occupies the recumbent posture, on a kitchen table or a board resting on two horses. The pelvis must be well down to the edge of the table, the sound limb hanging over the edge and resting with its foot on some support. The affected limb is held by an assistant, who exerts extension. To prevent the displacement of the body by the traction efforts, the lower end of the table may be raised. In addition, a sling made of a twisted bed sheet, is passed beneath the crutch (perineum) and its ends secured to one of the further legs of the table, or held by another assistant, to exert counter extension. For that part of the dressing which invests the lower part of the thigh.

the knee, leg and ankle, the pelvis may rest flat on the table, but while the turns of the spica are applied, the pelvis must be elevated, the shoulders remaining in contact with the table. This can be accomplished in a variety of ways—by an apparatus such as a hip-rest or by improvised devices. Of the former, the one here illustrated, made of a band of iron bent as shown, and screwed to a plank, is pushed under the pelvis. The blade supporting the pelvis is covered in by the turns of the plaster bandages, but it can be easily withdrawn after the plaster has set. Where no hip rest is at hand a sling of stout muslin playing about a pulley secured overhead, may be used to raise the pelvis, the loop of the sling becoming incorporated in the bandage. In other instances the pelvis must be supported by hands, or on the superimposed fists of an assistant.

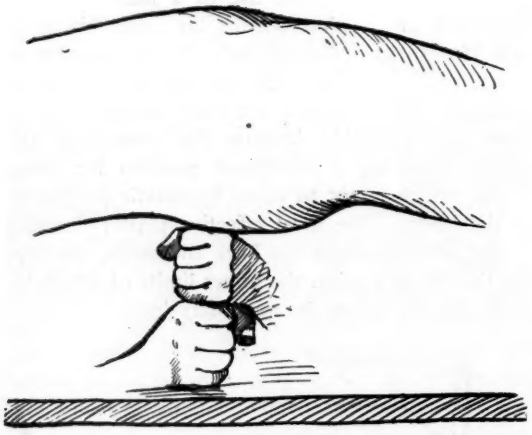


Fig. 17.—Pelvis raised on superimposed fists of assistant.

These preliminaries effected, the bony prominences of the spines and crest of each ilium are covered with cotton batting or pads of piano felt. A flannel bandage now invests the foot, leg, thigh, hip, waist and lower thorax. Over this the plaster of Paris bandage is applied. A narrow strip of piano felt is desirable about the waist to fill out the hollow, for in this situation the spica is very likely to crack. This accident may also be guarded against by increasing the turns of the bandage at that level. The perineum must be particularly guarded by proper padding, and if the turns of the bandage hug it too closely a crescentic segment must eventually be removed to avoid the production of a pressure sore. This part, also, must be well dusted with dermatol or talcum, and either one of these powders is to be blown in under the upper margin and about the pubis, to prevent irritation of the skin. That part of the cast in the vicinity of the genitals may be coated with shellac so that urine or vaginal secretions does not penetrate the cast, rendering it foul and brittle.

In children, fracture of the neck of the femur is associated with adduction of the thigh. Where this diagnosis obtains, the extremity should be put up in a position of marked abduction.

Fig. 18.—Plaster spica of hip.

In children, a plaster of Paris spica may also be applied by suspending the patient in a Sayre's suspension apparatus.

FRACTURES OF THE FEMUR (SHAFT)

The position occupied by the patient is the same as described for fractures at the hip. The cast should extend from the gluteal fold, and should include the foot at right angles. This form of cast is applicable to fractures involving the KNEE JOINT and for FRACTURES IN THE UPPER HALF OF THE LEG.

Fig. 19.—Plaster cast for fracture of upper half of leg. Note right-angled position of foot, and extent of cast.

FRACTURES OF THE LOWER HALF OF THE TIBIA AND AT THE ANKLE JOINT

These fractures are so severe and are accompanied with such deformity that they necessitate a narcosis to make the proper correction. Furthermore, if unattended by a wound they are *the* fractures of the

lower extremity best suited for the ambulatory cast.

The patient occupies the supine position. The flannel bandage or tricot base extends from the condyles of the tibia, and the lower margin of the patella, and includes the foot,—which is held at right angles by an assistant. The crest of the tibia

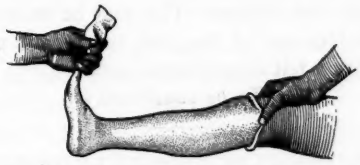


Fig. 20.—Illustrating tricot hose investment in fracture of the leg.

is covered with cotton wool to protect it from pressure. When there is no assistant to hold the foot, a muslin bandage sling is passed about the great toe and either held taut by the patient, if he be conscious, so as to bring the foot at right angles to the leg, or the strings of the bandage are fastened to the upper end of the table. About the condyles the plaster of Paris bandage is to be heavily applied so as to form a cuff.

The cast which is most desirable for *fractures at the ankle joint* differs from the preceding only in the very important particular, the position of the foot.

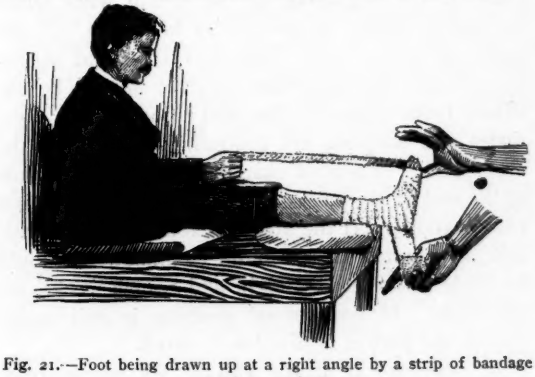


Fig. 21.—Foot being drawn up at a right angle by a strip of bandage held by patient.

This variety of fracture is most commonly followed by flat-foot. To obviate this it will always be necessary to have the foot well inverted (varus) and at a right angle to the shaft of the tibia. Thus the patient is made to walk on the outer side of his foot. When it is intended that the cast should be an ambulatory one, a cuff of plaster should closely hug the tibia and an extra number of turns of plaster of Paris should be passed about the lower fourth of the leg, some of them embracing the ankle.

The upper limit of this plaster cast, while it must closely embrace the condyles, should not encroach upon the popliteal space where it would limit flexion at the knee joint. This is avoidable by cutting out a crescentic strip of plaster with the pen-knife while the bandage is yet in the plastic state. Other points of pressure in this cast are generally encountered on the inner and outer aspects of the foot. These are avoided by not carrying the turns of the plaster bandage so far forward as to impinge on the toes. If these pressure points do give trouble, greater relief will be afforded by splitting the bandage on either its inner or its outer side, than by cutting off any bandage in the circular direction.

FRACTURES OF THE FOOT

A fracture of any of the bones of the foot may be very well treated by a plaster of Paris bandage, including the ankle and terminating over the lower third of the leg.

Caution. The dorsum of the foot should be well protected from pressure by a padding of non-absorbent cotton. When the metatarsal bones are fractured, a pad of piano felt should be placed on the plantar surface as an effort to preserve the transverse arch.

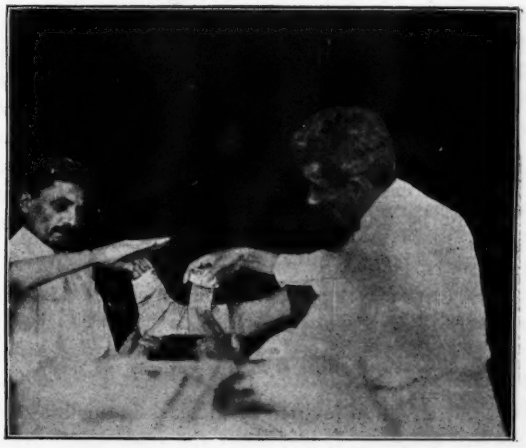


Fig. 22.—Manner in which assistant holds foot for application of plaster bandage.

FENESTRATED PLASTER OF PARIS DRESSING FOR COMPOUND FRACTURES.

This term applies to an ordinary plaster of Paris bandage in a part of which a window is cut to permit of treating the underlying wound. The opening in the cast should always be larger than the wound.

METHODS OF FENESTRATION

The window can be made in a variety of ways.

A. The wound, covered with appropriate dressing, may be included in the plaster of Paris dressing. Its location having been noted by measurement, a window corresponding to its dimensions is then cut from the plaster before it has set. The rough edges of the

plaster bandage can be smoothed and still further protected from the discharge of the wound by investing the edges with adhesive plaster, or with gutta-percha tissue made to adhere with chloroform.

B. The wound, duly protected, is covered with a measuring glass, a graduate or a tumbler of convenient size, the turns of the plaster of Paris bandage passing about the glass.

THE AMBULATORY PLASTER OF PARIS CAST.

The treatment of fractures of the leg and particularly those of the ankle, where there is no axial displacement of the fragments, demanding extension, are best suited for the "ambulatory cast."

It is the practice of some surgeons to have the upper limits of the cast at the condyles of the tibia, others would include the knee joint.

The indications for the choice of either may be set down as follows: Where the fracture is limited to the ankle joint a cast extending to, and embracing the condyles, is sufficient. All fractures above the middle of the leg call for immobilization of the knee also. Under these circumstances the cast should be carried up to the middle of the thigh.

Experience has shown that no metal strips need be incorporated in the plaster of Paris dressing. The ambulatory plaster of Paris splint differs from the ordinary plaster dressing applied for a like fracture, in the extent of the immobilization, in the greater number of the plaster of Paris bandages used, and in the increase in thickness of the plaster of Paris bandage by multiplying the turns at certain levels.

Fig. 23.—Showing plaster of Paris sploint with two fenestræ.

The one situation favored by increase in thickness to prevent cracking, is just above the ankle joint. The upper limit of the plaster about the condyles of the tibia is also increased in thickness so that the weight of the body transmitted to the cast will not, in being transferred to the knee and thigh, cause the cast to cut into the soft parts, as would be the case with a thin edge of plaster. The ambulatory plaster splint is practicable in a fracture of the ankle or leg without a stirrup, by virtue of the mechanical fact that in a pillar, the stress and strain are distributed on the surface. Hence the column of plaster about the fractured leg carries, in greater part, the superimposed weight of the body. To give some elasticity to the rigid plaster beneath the plantar surface of the foot, some authorities advocate the insertion of a layer of felt.

The use of the ambulatory plaster of Paris splint does not imply that walking with a fractured limb will be possible at once. Only after several days, most commonly at the end of the first week, the patient can make efforts at standing and gradually, as he gains confidence, the limb can be used to walk with. In course of time the plaster of Paris on the sole of the foot softens. This may be unheeded, for with the free use of the limb the foot is protected with either a felt slipper or an arctic.

(To be continued.)

THE TREATMENTT OF RETRODISPLACEMENT OF THE UTERUS.

The operative treatment of retroversion will never entirely displace other modes of treatment. Many cases are cured without operation; the majority of cases must be managed temporarily at least by a pessary; and there is a small proportion of cases in which an operation is unjustifiable. It is likely, however, that the large majority of all such patients in the future will select the operative treatment. . . . .

The treatment of *retroflexion in the puerperium* may be thus outlined: An examination should be made in the beginning of the fourth week when the patient begins to walk about her room. If the uterus is turned over backward it should be replaced, and the knee-chest posture should be assumed twice a day for the next three weeks. Pessaries and tampons are contraindicated before the sixth week. A second examination should be made at the end of six weeks (three weeks after the first examination). If the uterus is found in good position, as it often is, two more examinations should be made at the end of eight and twelve weeks, respectively. If the normal position is still maintained, the patient is dismissed, cured.

If examination at the end of six weeks from childbirth reveals a retrodisplacement that had not existed at the first examination in the fourth week (a frequent occurrence), or if the retroflexion discovered in the fourth week is not corrected by postural treatment, the uterus should be replaced and a suitable pessary introduced. The patient is then placed in charge of a skilful masseuse for a course of abdominal massage and Swedish movements lasting eight weeks. The pessary is then removed. An examination is made at the end of two, six, and twelve weeks. If the uterus remains in a normal position at the last examination the patient is probably cured.—Barton C. Hirst in *The Therapeutic Gazette.*

REMARKS ON LOCAL ANESTHESIA, WITH ESPECIAL REFERENCE TO ITS EMPLOYMENT IN GENITO-URINARY WORK.*

By S. WM. SCHAPIRA, M.D.,
NEW YORK.

The application of snow or pounded ice as a means of benumbing the sensibility of the skin has been practised from time immemorial. Of only recent date is the knowledge of the various freezing mixtures that have been introduced by chemists.

The discovery that the skin can be anesthetized by intradermal infiltration with cocain or with other analgesic agents, was the key to success in local anesthesia. It seems that this suggested itself to several observers at the same time. The first and most prominent that occurred in literature were: W. S. Halsted, 1884; J. L. Corning, 1885; Reclus and Wall, 1886; Schleich, 1890.

The discovery that extremely dilute solutions (1-20,000) of cocain and of other agents, will render tissues anesthetic, and that they can be used most effectively in very weak and non-toxic doses, belongs to Schleich and Heinze.

Corning demonstrated the effectiveness of a warm solution of cocain of one-third of one per cent. in 1885. Reclus advocated solutions not stronger than one per cent. in 1886. It was Schleich, however, who demonstrated the effectiveness of cocain in solutions of 1-5, 1-10, 1-100 of one per cent. in his great work, "Schmerzlose Operationen." This was in 1894, but he had begun his experiments in 1888.

The most important discovery by Corning, of New York, in 1885, was that the anesthetic action of cocain can be prolonged indefinitely by arresting the circulation in the anesthetized area by some mechanical device, as by an elastic constriction. Kummer, of Geneva, in 1889, also advocated the value of stasis and constriction in order to diminish toxic absorption.

Physiologists in recent years agree that all normal organs and tissues of the body with the exception of the papillary layer of the skin, and the nerves, are devoid of sensibility, and that if sensibility in the skin and the nerves that supply a certain region is obtained by an anesthetic, the sensitiveness of the tissues can be practically obliterated. The only serious obstacle, which in major surgery frequently compels general or cerebral anesthesia, is the psychic pain, which cannot be controlled by purely local anesthesia.

*Read before the New York Reno-Vesical Society, December 27, 1905.

It must be clearly understood that the artificial anesthesia of any organ or tissue of the body depends entirely for its production upon the suppression of all sensory impressions made upon the region, through the agency of the nervous system. This suppression may be effected by:

1. Paralyzing the peripheral nerve-ending or terminal organs of sensation, as in the papillary layer of the skin. 2. By obstructing the path of all sensory impressions in the nerve trunks, including the sensory roots in the spinal cord.

The Local Infiltration Method.—By this is meant the production of artificial edema of the tissues in order to suppress their sensibility. Distilled water injected in sufficient quantity to edematize the papillary layers of the derm and surrounding tissues will produce a transient anesthesia of the edemitized area.

Schleich, the father of the infiltration method, has underestimated the paralyzing effect of the very weak solutions of cocain he advocated (1-5, 1-10, 1-100 of one per cent.) but Braun, by numerous experiments, has shown that the analgesic properties of Schleich's solution are due to the cocain, and that on the other hand, the weak solution of cocain, advocated by Schleich as so effective, becomes practically worthless, if not used in connection with the infiltration method.

From the preceding, it is evident that there are two efficient factors in the production of infiltration anesthesia. One is the physical effect of the infiltration-pressure (Schleich's method); the other, the chemical action of the drug employed (Corning's and Reclus' method) by which the tissues are injected layer by layer, with strong solutions (1 per cent. to 4 per cent.) of cocain, their efficiency depending exclusively upon the diffusion of the chemical analgesics.

Since the introduction of Beta eucain which can be used in relatively concentrated solutions, without fear of toxic effects, and since the neuro-regional method has been perfected, there is a decided tendency at present to depend more upon the action of analgesic drugs than upon the infiltration method itself.

The preference given in the selection of these methods, will be determined by various conditions, which will be appreciated in connection with the technic in various parts of the body.

The Regional Method. By this method a region or area embracing the prospective field of operation is to be anesthetized, rather than the field itself. After a preliminary infiltration of the skin, the operator aims to cocainize the deep nerve fibers supply-

ing the field of operation. The cocainization of the nerves that supply the region may be done at a distance from the field of operation, or the nerve trunk may be injected directly.

The Combined Method.—This consists (1) in using two or more local anesthetics, in the course of the same operation, as cocain and eucain B. or cocain and stovain; or (2) the local anesthetic action of cocain or other analgesic is preceded or supplemented by the action of a cerebral anodyne (morphia) or by the administration of a general anesthetic (chloroform).

I have consumed much space in describing the old and the very recent methods of application of local anesthesia with little regard to the analgesic drug used. I consider the skilful application of the above described methods of more importance than the selection of the drug used. In looking over the recent literature I find that every operator seems to be pleased with a certain analgesic and will not substitute for it another.

Speaking from purely personal experience and observation, I can conscientiously state that all operations included in genito-urinary surgery, without any exception, can be performed under local anesthesia, by one of the methods above referred to, viz., 1. Infiltration; 2. Neuro-regional; 3. Combined; 4. Spinal. The results are most gratifying and the dangers or general anesthesia are avoided.

Having outlined the principal method of application of local anesthesia, I shall now endeavor to describe some of the principal analgesics in use.

Cocain in Genito-Urinary Surgery.—Cocain, an alkaloid derived from the leaves of erythroxylon coca, was discovered by Niemann in 1860. Although its anesthetic properties were first described by Professor Von Anrep, of Charkov (*Pflüger's Archiv.*, 1879, XXI, page 38), it was little known until the publication of a paper by Carl Koller, in September, 1884.

The hydrochlorate of cocain, soluble in alcohol and water, is used. The alkaloid is a very unstable preparation, contact with water being sufficient to decompose it.

I have used cocain in various strengths from one to five or even six per cent. without any toxic or deleterious effects, but for the last four or five years I have employed it in considerably lower strengths, four per cent. being the highest.

There is no question in my mind that as far as analgesic properties are concerned, cocain is superior to any other analgesic known to date. Because of the reported fatalities from its use, I advise that for extensive operations (laparotomy) cocain be employed in very small quantities to inaugurate anesthesia and that this be followed up with less toxic analgesics, such as Beta eucain, stovain, nirvanin, etc. With the aid of local anesthesia, Hunter has successfully performed abdominal section for retroverted uterus. Robb (*Cleveland Medical Gazette*) performed a number of laparotomies with the aid of cocain at the Lakeside Hospital, in 1898. A. G. Hinodmann, from observation and study of his fifty cases of abdominal section with local anesthetics, claims that this method deserves wider application in operations of considerable gravity. Barker has successfully used cocain anesthesia in the following operations: abdominal section, hernia, amputations, orchidectomy, wiring of the patella, hydrocele, fistula in ano, varicocele, intestinal resection. V. E. Neschel, reports a number of cases successfully operated upon with cocain as an anesthetic, in some of which he used Schleich's method. Among those cases were four of suprapubic cystotomy. T. H. Morse advocated local anesthesia in abdominal section and reported five cases, two of which were ruptured tubal pregnancies. (He has used cocain only). All this tends to show how severe and prolonged operations can be and are performed under local anesthesia.

Eucain.—This is a synthetic product of definite chemical composition. There are two preparations of eucain: Alpha eucain and Beta eucain. The first is a very strong product and is not to be used. The second preparation, however, is used very extensively. There is still another preparation, Beta eucain lactate. This new salt is soluble in water to the strength of 22 per cent., and it is to be preferred when a strong, concentrated solution is required. Eucain B. possesses the same analgesic power as cocain but it is only one-quarter as toxic and is free from all after-effects; the solution is permanent and can be sterilized by boiling.

Thomas J. Yarrow reports a series of thirty-five cases successfully operated upon with the aid of eucain B. Paul Heinze recommends eucain B. as an infiltration anesthetic. His formula is.—

Eucain B.	1
Sodium Chlorid	8
Distilled Water	1000

Freund strongly advocates his mixture of two parts of adrenalin (1-1000) and eight parts of one per cent. of eucain B., to be injected under the skin or mucosa, or both. He regards it as indispensable in plastic operations upon the perineum, and in his extensive experience he has never observed any by-effects.

Barker's formula is:

Distilled Water	140 c. c.
Eucain B	0.2 grm.
Sodium Chlorid	0.8 grm.
Adrenalin Chlorid (1-1000)	0.7

He claims that twice as much eucain B. may thus be injected without ill results.

Other literature on this subject:

1. Dumont—*Bulletin general Therapeutic,* September 23, 1897.
2. P. Silex—*Deutsche Med. Wochenschrift,* February 4, 1897.
3. Reclus—*Bulletin Medical,* March 30, 1898.
4. A. E. Barker—*Lancet,* February 25, 1899.
5. L. Turnbull—*Philadelphia Medical Journal,* May 28, 1898.
6. Braun—*Archiv. f. Klin. Chirurgie,* September, 1898.
7. R. Matas—*American Medicine,* December 28, 1901.
8. H. M. W. Gray—*Scottish Med. & Surg. Journal,* August, 1902.
9. T. C. Martin, *Cleveland Medical Journal,* July, 1902.
10. B. Riedel—*Berliner Klin. Wochenschrift,* March 16, 1903.

Schleich's Method—This method was above described fully.

The formula is as follows:

Cocain muriate	1.0
Morphin muriate	0.25
Sodium chlorid	2.0
Distilled water	1000.

It contains ¾ grain of cocain to 50 c.c. of water, which is the maximum quantity injected hypodermatically.

Kreke, of Munich, reports excellent results by Schleich's method in extensive operations (*Pediatrics,* May 9, 1898). Prof. Albert used Schleich's method of local anesthesia in fifty per cent. of all operations. Friedlander advises Schleich's method in all skin operations, in operations upon the extremities and the abdomen and in all operations where ether and chloroform are contraindicated.

Ethyl Chlorid.—(C_2H_5Cl). Hydrochloric ether is a white colorless liquid, boiling at 11° C., 59° F., obtained by passing gaseous hydrochloric acid through ethylic alcohol to saturation, and distilling over a water bath. It is miscible in all proportions with alcohol, but slightly soluble in water. It is applied by a fine spray six or eight inches from the skin, which first becomes pink, then red, and finally white; anesthesia is produced in about half a minute and lasts about two minutes. Ethyl chlorid is used in minor surgical operations, e. g. opening an abscess.

In genito-urinary surgery, it is used but little—for circumcision, or removal of urethral warts,—for the application of the anesthetic is more painful to the genitals than is cutting without anesthesia at all.

Stovain.—This is a hydrochloride of:

1. Dimethylamine
2. Benzoylpentanol

and is one of the series of products discovered by M. Faurneau. As this preparation is obtained by synthesis, it is definite in its chemical composition.

Stovain is one of the analgesics which has been advocated to replace cocain for local anesthesia, because of its freedom from toxicity, but it seems to the writer far inferior as an analgesic to either cocain or eucain B.

Reclus advocates its use. This is his formula for general surgery:

Stovain	gr. viiiss-xiiss
Aq. dest.	℥iv

40 c. c. can be injected without the least inconvenience.

Dr. Pouchet's observation with stovain is that in order to produce analgesia, stovain must be in contact with the nerve itself.

For spinal analgesia the following formula has been advocated by Chaput, Tuffier, Kendirdjy, and Burgand:

Stovain	0.10 grm.
Sodium chlorid	0.10
Aq. dest., ad.	1 c.c.

This is 1½ grs. to each c.c. Chaput states that the local anesthestic action of stovain is identical with that of cocain, that it is less toxic, and that all laparotomies, even the most difficult, may be performed with its employment.

Kendirdjy and Burgand report 140 cases successfully operated on under spinal injection of stovain, in *La Pressse Medicale,* May 31, 1905. The operations comprised: circumcision, amputation of the penis, removal of hemorrhoids, castration, epidymectomy, radical cure of inguinal hernia, hypospadias, hydrocele, internal urethrotomy and urethral fistula; in no case was there appreciable modification of pulse or respiration, but in two instances, there was some troublesome vomiting, in three cases there was relaxation of sphincters, and twelve patients suffered witth headache of varying persistence and duration after operation.

For more literature on the subject I refer to:

De Lapersonne—*Presse Medicale,* April 13, 1904.
Chaput—*Societè de Biologie,* May 1, 1904.
Reclus and Pauchet—*Acad. of Med.,* July 5, 1904.
Tuffier—*Societè de Chirurgiens,* October 12, 1904.
Kendirdjy—*Presse Medicale,* October 12, 1904.

E. Sonnenberg—*Freien Verein der Chirurg.*, Berlin, February 13, 1905.

C. G. Coakley—*Medical News*, April 15, 1905.

Among other local anesthetics *antipyrin* has been highly recommended by Ferrier and Pereire. Their formula is as follows:

Powdered Antipyrin..... 30 grs.
Cocain Hydrochlorate..... ⅜ gr.
Boiled water .....60 minims.

Each injection of 15 minims contains 7½ grains of antipyrin, 15-100 of a grain of cocain. From 1 to 3 injections may be employed.

Nirvanin and *novocain* have also been highly recommended.

I wish from personal experience and observation briefly to enumerate the several most important operations on the urinary tract, from the kidneys to the meatus urinarius, stating the best analgesic and method of local anesthesia to be used in each.

Surgery of the Kidney.—The operation of nephrorrhapy, nephro-lithotomy and nephrectomy (for floating or movable kidney, stone, tumor, cyst or abscess) can be performed by the combined method of local anesthesia, that is, morphia, gr. ¼ given hypodermatically, and infiltration with Schleich's solution (*vide supra*). Fifty c.c. will contain gr. ¾ of cocain; should the patient be very nervous a little ether or chloroform by inhalation will overcome the last objection.

Surgery of the Ureters.—For ureterotomy or uretero-lithotomy the above stated method of local anesthesia will suffice.

Bladder Surgery.—For exstrophy, ulcers, rupture, tumors, etc., where suprapubic cystotomy is to be done, infiltration with Barker's solution (*vide supra*) will be the best.

Spinal injections for these operations are being experimented with, and with fairly good results.

Prostatic Surgery.—(a) Prostatectomy, and operation for removal of prostatic calculi by perineal section, can be done very favorably by the combined method stated above, using either Schleich's or Barker's formula.

(b) In prostatectomy by suprapubic incision Barker's formula is best in connection with a little chloroform or ether, if necessary.

Surgery of the Scrotum, Testes, Epididymes, Cords can all be performed under local anesthesia by the infiltration method, using Barker's formula, also by spinal analgesia.

Surgery of the Penis.—In all operations on the penis the spinal injection of stovain is very favorable, the formula being as follows:

Stovain ..... 0.10 grm.
Sodium chlorid..... 0.10 grm.
Distilled water..... 1 c. c.

It contains one and a half grains of stovain to each cubic centimeter.

For hypospadias and epispadias a 2 per cent. solution of eucain B. is excellent.

The operation for phimosis, either by dorsal slit or circumcision, I have performed by ligating the penis at the root and injecting any of the above-mentioned analgesics,—even plain distilled water acted well and without the least pain or discomfort to the patient.

For gangrene, epithelioma, or other malady necessitating amputation of the penis, this operation can be done either by spinal analgesia, or by using the combined method,—Barker's formula, in connection with a little ether or chloroform, or with morphia sulphate gr. ¼ preceding the infiltration anesthesia, if the patient is not nervous.

For internal urethrotomy, the best analgesic is cocain 2 per cent. injected into the urethra. No other analgesic gave any result. For external urethrotomy, however, eucain B. infiltration in the perineum is excellent.

For irritable bladder sphincter, spasmodic stricture, and the like, and irritations within the urethra and bladder, cocain is the only analgesic of value. The other mentioned anesthetics do not seem to have any effect, except when injected within the skin or mucosa.

For meatotomy there is nothing more effective than cocain 2 per cent. applied on a cotton plug within the meatus about five minutes before cutting. The other analgesics are practically useless if applied on cotton. Ethyl chlorid spray is effectual, but the pain caused by the freezing is far more severe than the operation without anesthesia, and I have entirely discarded its use in my genito-urinary work.

For operation on the inguinal glands the neuro-regional method of local anesthesia, using eucain B., is excellent.

It seems that the spinal analgesia with Kendirdjy's formula affects the genital organs more, and more quickly, than anything else in the body, and that the analgesia seems to be so complete that manipulation of these organs does not produce the slightest discomfort to the patient.

64 RIVINGTON STREET.

The urine of patients who have been taking balsam of copaiba gives a reaction that cannot be distinguished from the real blood reaction. It also reacts to the Heller nitric acid test the same as albumen.

V. PLETH, Crookston, Minn.

SOME OBSERVATIONS IN THE EAR CLINICS OF BERLIN DURING THE SUMMER OF 1905.*

By CHARLES H. MAY, M.D.,
NEW YORK.

There was very little that I saw in Berlin that I had not previously seen in New York. The Berlin aurists were extremely courteous and afforded me every facility for observing everything and thus much was seen in a very short time. I spent most of the time in Jansen's Clinic, being present from 7 to 10:30 A. M.; then taking in one or two eye clinics, I would visit Lucae's clinic from twelve to two o'clock. Part of each afternoon was spent at the Anatomical Institute, and the work here was found both instructive and interesting; there was an abundance of material, including specimens of dissections of various parts of the body. Being interested in making some dissections of the facial nerve, I had no difficulty in concluding arrangements for the exclusive attention and help of one of the assistants for an hour or two every day; this, with the large amount of material placed at my disposal, enabled me to spend my time there very profitably; it is doubtful whether anyone can obtain such facilities for this particular study in New York.

Regarding the work done in the clinics, this is very much like what is seen in New York; but a few points are worthy of mention. Jansen was particularly courteous, and would send notices of operations to those who were interested at any hour of the day or night, and give every opportunity to see operations and follow up the cases afterward. He is a particularly fine operator and handles the chisel and mallet with remarkable ease and dexterity, exposing the desired region with wonderful skill and rapidity. In Berlin, chisels (Lucae's or some with modification of these) are used in mastoid operations almost exclusively, the bone forceps and curette being employed much less extensively than in this country. There also seems to be a greater tendency to close mastoid wounds; in Jansen's clinic, metal sutures (Michel's) are used for this purpose; the writer remembers having seen these used in general surgical cases, but never before in mastoid wounds. The sutures consist of small, curved, flattened metal wires with pointed extremities; they are applied with a special form of forceps, left in place for several days, and then removed with little hooks; the sutures may be used repeatedly; they are supposed to prevent the occurrence of stitch abscesses, but they do not seem to offer any advantage over thoroughly sterilized silk sutures.

The forehead mirror in common use in Berlin is supplied with an attachment by means of which it can be supported by the teeth; this removes the annoying band around the forehead. Though the writer purchased one of these and tried it in office work, he does not like it, since it seems uncleanly. In operating, however, it may prove of advantage. An attachment to the edge of the mirror, capable of being sterilized, and permitting the operator to touch the sterilized portion in shifting the position of the mirror, seems a desirable addition when reflected light has to be employed in ear operations.

The method of giving ether in Berlin is peculiar; the anesthetic is poured into a rubber bag about a foot long, having a diameter of three or four inches; this makes it necessary to take off the mask from time to time and allow the patient to breathe air. One misses seeing the Bennett inhaler, but the results seemed satisfactory. In Jansen's clinic one of the attendants has charge of the anesthesia. Gas is seldom used, and children are rarely anesthetized for the removal of adenoids.

The instruments which formerly seemed clumsy and heavy to those used to American models, have been improved very much of late and are now as delicate and graceful as the models turned out in this country. Since instruments are subject to a heavy duty, even when brought in by the physician himself, there is no advantage in buying them abroad.

I was much impressed with the Nernst lamp for throat, nose and ear work, having seen it in Frankel's clinic and elsewhere in Berlin. Its adaption for furnishing light in such work gives a remarkably satisfactory illumination—solid, white and powerful. This lamp can be operated with the street current, without rheostat; the luminous portion consists of a network of wires covered with some white material, which is made incandescent by the electric current. Tried in office work, the lamp gives satisfaction; but unfortunately all the renewals have to be imported, for although the Nernst lamp is used extensively in factories in this country, it has not yet been supplied in a form to permit small lamps to be employed with the voltage in common use. The lamp is about fifty candle power and is mounted in a Hirschmann model stand which renders the rays parallel and permits them to be thrown in any direction.

Taking everything into consideration, though averse to making comparisons, the writer considers that otological work in this country is in no way inferior to that which he observed in Berlin.

* Read before the Section on Otology, N. Y. Academy of Medicine, November 9, 1905.

American Journal of Surgery

PUBLISHED BY THE

SURGERY PUBLISHING CO.

J. MacDONALD, Jr., M.D., President and Treasurer

92 William Street, N. Y., U. S. A.

To whom all communications intended for the Editor, original articles, books for review, exchanges, business letters and subscriptions should be addressed.

SUBSCRIPTION PRICE, ONE DOLLAR
FOREIGN, SIX SHILLINGS

Original Articles and Clinical Reports are solicited for publication with the understanding that they are contributed exclusively for this journal.

It is of advantage to submit typewritten manuscript; it avoids errors.

CHANGE OF ADDRESS. Subscribers changing their addresses should immediately notify us of their present and past locations as we cannot hold ourselves responsible for our Journal being sent to former addresses unless we are notified as above.

ILLUSTRATIONS. Half-tones, line etchings and other illustrations will be furnished by the publishers when photographs or drawings are supplied by the author.

WALTER M. BRICKNER, M.D., Editor

NEW YORK, MARCH, 1906.

INCISIONS FOR REMOVAL OF THE APPENDIX.

In the February number of the *Annals of Surgery* appears an article by G. G. Davis of Philadelphia, proposing the employment of a transverse incision for the removal of the appendix (see "Progress in Surgery"). A somewhat similar incision had already been advocated by J. W. Elliot, but according to Davis it has not received sufficient trial. The advantages claimed for the proposed procedure are sufficient exposure, freedom from injury to the motor nerves of the rectus, absence of post-operative hernia, especially when drainage is employed, and ready access when infection of the wound takes place.

Several incisions, with even more numerous minor modifications, have been used in performing operations for appendicitis. Of these probably the oldest is the one known as Tonnenburg's, which is an incision parallel to Poupart's ligament directly through the muscle fibers, without regard to anatomical parts. This operation was chiefly employed in the early days of surgery of the appendix, when the indications for intervention were limited to the opening of a periappendicular abscess, free drainage and little or no suture of the abdominal wall. Needless to say, post-operative hernia was the rule.

McBurney introduced his gridiron, intermuscular incision in 1894, and this method has been very popular, especially in America. When a moderate sized incision is found to suffice, and little or no drainage is required, its results are excellent.

Battle in 1895, Jalaguier and Kammerer in 1897, proposed an incision along the outer edge of the rectus muscle, retraction of the muscle and incision of the posterior rectus sheath. This "trap-door" method is very extensively used, and has a wide application. Even when drains have to be inserted, a hernia rarely results, as the rectus muscle shows a tendency to gradually resume its former position and cover in the remains of the sinus tract.

The rectus incision has one advantage which will always render it more useful and generally applicable than any oblique or transverse incision that can be proposed. This advantage, especially appreciated by surgeons who do much abdominal work of urgency, is the possibility of extending the opening upward or downward within the limits of the pubic ramus below and the costal cartilages above. In acute troubles of doubtful etiology, with the pain centralized in the right iliac fossa, a provisional diagnosis of appendicitis will have to suffice in many cases, until the peritoneum has been opened. While the provisional diagnosis will usually prove correct, not infrequently disease of the pelvic organs, gall bladder trouble, a perforated duodenal ulcer or other condition is encountered. These may be readily dealt with by enlarging the rectus incision upward or downward, and, if necessary, affording a wider median exposure by the so-called "hockey-stick" addition. The motor nerves to the rectus may be exposed and retracted without much loss of time, and hernia may be prevented by suture of the various layers with absorbable material. If infection of the abdominal wall is anticipated, a few small gauze drains placed behind the rectus muscle and carried through the outer opening left for abdominal drainage, will minimize this danger.

In easy, clean cases, almost any incision is effective, as long as the layers are carefully approximated, but in those cases in which unexpected difficulties are encountered, a wide exposure, by an incision affording the possibility of reaching the median line and even the left side, is of inestimable advantage.

R. T. F.

CARREL AND HIS EXPERIMENTS.

Some months ago, Carrel, working in the laboratories of the University of Chicago, published a preliminary report of a number of experiments, in which he had successfully anastomosed bloodvessels of even very small caliber, thereby enabling him to transpose organs into various parts of the body. Thus, he removed a portion of the common iliac artery and restored its continuity by suturing a segment of vein in its place. A lobe of the thyroid

was removed and resutured with the blood supply in the reverse direction. Sewing vein to artery and artery to vein, the bloodvessels of a kidney were sutured to the carotid and jugular vessels, the ureter being implanted into the esophagus; the kidney continued to secrete normal urine for many hours. More recently (*American Journal of Medical Sciences,* February, 1906) he amputated the leg of a dog at the lower third and sewed it back again, reuniting the severed bloodvessels, etc.; the circulation was restored for five days, when gangrene resulted, owing to excessive edema and thrombosis. Carrel hopes, however, to eliminate these occurrences in the future and to report a successful case.

Thus far, these experiments have excited merely a physiological interest. It does not, however, require a great stretch of fancy to conceive of the possibilities which Carrel's researches may have for surgery. It would be superfluous to detail such possibilities, because he who runs may read. The technic whereby Carrel sutures fine bloodvessels end to end, is in itself of the greatest interest to study. We await further reports with more than passing interest.

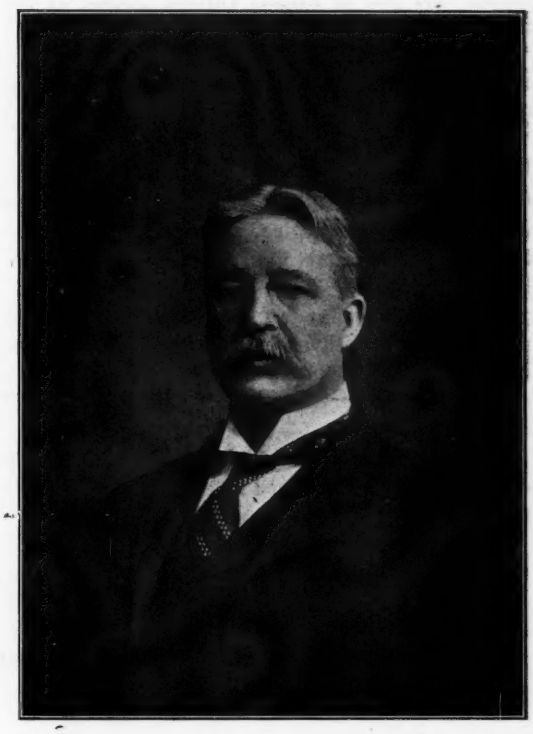
E. M.

GEORGE R. FOWLER.

America has lost one of its best surgeons. Dr. George Ryerson Fowler died at Albany, N. Y., on February 6th, of paralytic ileus, eight days after an operation performed for a violent attack of appendicitis, which had seized him while he was traveling to the capital to attend the centennial meeting of the N. Y. State Medical Society.

Von Mikulicz, whose name will ever be linked with gastric surgery and with the radical treatment of cancer of the stomach, himself succumbed to carcinoma ventriculi! In no field of surgery had Dr. Fowler contributed so much as in that of appendicitis and peritonitis!

Few men are as useful as was he, in all the various activities of their calling. As a practising surgeon, he was the most prominent in Brooklyn, his home, where he was senior surgeon to several of the largest hospitals. As a military surgeon, he served in the Spanish-American war as chief of the operating staff of the Seventh Army corps, and he organized the hospitals in Havana. He was also Brevet Brigadier General and Surgeon in the National Guard of the State of New York. A pioneer in first aid work, his classes in the National Guard camp at Peekskill in 1885 led to the introduction of his system into the whole service. He organized and was at one time President of the Brooklyn Red Cross Society. As a teacher, he will be remembered by those many students who attended his course at the New York Polyclinic, where he was Professor of Surgery for several years. As an author, he created a Treatise on Surgery and a work on Appendicitis—of which the latter went through two editions. His other contributions to surgical literature were many and important, and several procedures devised by him will be found quoted in the text-books. As a promoter of medical organization and medical education, few in the profession labored more earnestly. In 1896 he delivered the anniversary discourse of the N. Y. Academy of Medicine, of which he was a vice-president at the time of his death. He was a member of the State Board of Medical Examiners, a meeting of which board he had also expected to attend at Albany. He was high in the councils of the state medical society; he was one of the founders of the Brooklyn Anatomical Society, and for a time its president; and he was active in many other national and local associations.



George Ryerson Fowler

The abrupt termination of Dr. Fowler's career in his sixth decade, is a very real loss to the community in which he lived and to the profession in which he labored.

Surgical Suggestions.

In determining the cause of a post-operative fever never fail to look at the throat.

A persistent, chronic discharge from the nose should lead one to suspect chronic disease of the frontal or other accessory sinus.

When a patient complains of dysphagia, do not neglect to examine the pericardium for effusion.

It is remarkable how frequently a purulent pericarditis may exist without causing many or severe symptoms. Never neglect an examination of the cardiac area, therefore, in cases of suspected sepsis.

The best site for an urgent tracheotomy is through the crico-thyroid membrane. To hold the opening apart a couple of hair pins bent at the end may be used as retractors.

In the performance of high tracheotomy a great deal of room can be gained by dividing transversely the fascia that extends upward from the thyroid.

The greatest immediate danger after a tracheotomy is the possibility of a subsequent pneumonia. This can, in a large measure, be obviated by filtering the inspired air through a soft sponge saturated with warm one per cent. phenol solution.

Do not be too hasty in making a diagnosis of intercostal neuraliga. With the exception of pulmonary and pleural conditions, ulcer of the stomach simulates intercostal neuralgia more frequently than any other lesion.

Do not be too sure that a mass in the region of the pylorus is a carcinoma. In some cases the infiltration around a chronic ulcer is very extensive and may simulate the feel of a new growth.

It is surprising how much information can be derived by *abdominal palpation conducted with the patient in a hot bath,* the temperature of the water being gradually raised to 105° F. It usually secures as much relaxation as does the administration of an anesthetic, sometimes even more. In addition to the avoidance of the dangers and the disagreeable features of narcosis, it has the important advantage that the patient is able to call the examiner's attention to sensitive areas.

Ascites in the presence of a mass in the pelvis usually, but not necessarily, means malignancy.

Gradually increasing jaundice without previous history of pain, or with a history of very slight pain, is very suggestive of malignant disease.

Do not consider too lightly a history of "growing pains" in the extremities in children. These symptoms may be due to a grave osteomyelitis.

A subcutaneous tumor with a history of puncture or the presence of a minute scar in the overlying skin, usually means that one is dealing with an inclusion-or so-called Ranvier cyst.

Do not amputate an extremity for sarcoma without a previous careful examination of the lungs and mediastinum for metastasis. Such symptoms as continued cough, a small hemoptysis or beginning dyspnea, should be regarded as highly suggestive of such a complication.

Pulsation in the course of an artery should not lead to the hasty conclusion that one is dealing with an aneurism. A tumor overlying a large vessel, and also a vascular sarcoma of the bone, may simulate an aneurism very closely.

The following are some of the conditions in the presence of which an examination for tabes dorsalis should never be omitted: 1. All primary swellings of the knee or ankle joint without apparent origin. 2. "Sciatica" and "lumbago." 3. A deep ulcer on the base of the great toe. 4. Repeated vomiting at various intervals, with periods of well-being intervening. 5. Abdominal pains without other evident cause.

There is one point that must always be thought of when pus has been aspirated after an exploratory puncture for either suspected empyema or liver abscess; make sure that the "pus" does not come from a bronchus. This can be determined, as a rule, by microscopical examination of the aspirated fluid.

It is a peculiar fact that post-operative prolapse through the epigastric wound occurs frequently in operations for malignant disease of the stomach. Such wound therefore should be closed with more than usual firmness and all possible precautions should be taken to guard against post operative vomiting.

Book Reviews.

Bodily Deformities: *A series of lectures delivered at the City Orthopedic Hospital (London) in the year 1852, and subsequently.* By E. J. CHANCE, F. R. C. S., Eng. Edited by JOHN POLAND, F. R. C. S., Eng. Second Edition. Illustrated. In two volumes. Vol. I. London: SMITH, ELDER & Co., 1905.

When one takes into consideration the swift progress of medicine in the past decades, one might expect that a book originally published in 1862 would now be obsolete. This volume does indeed contain many ideas and principles that have long ago been abandoned; nevertheless it is remarkable how closely the general trend of ideas expressed therein approximate those that are generally held by orthopedic surgeons to-day. Of course, a volume that contains no discussion of Wolff's law of deformities, or of the recent work on experimental embryology in relation to the causes of deformities, lacks much that is desired. It is altogether difficult to understand why a republication of this old book has been undertaken, except as a tribute to an original and critical mind. The work is essentially of historical interest only.

Die Blinddarmentzündung (Perityphlitis) in der Armee von 1880-1900. By DR. STRICKER. 96 pages; 10 plates. Berlin: AUGUST HIRSCHWALD, 1906. Price, 4 marks.

This monograph is a statistical research based upon the records of the German army and covering a period of twenty years. 6,296 cases were treated, of which 4.3 per cent. died; 84.4 per cent. recovered and again were able to serve; 11.3 per cent. recovered but were invalided. In the years 1897-1902, of half a million soldiers, 18 died each year from perityphlitis. Of the 235 cases operated upon, 28 per cent. died; of the remaining 6,061 patients, treated expectantly, 3.4 per cent. died. As the accuracy of diagnosis has improved no conclusive evidence of an increase in the frequency of appendicitis can be drawn. Etiologically, influenza and suppurative infections elsewhere in the body, may have some influence. Soldiers are more frequently attacked in their first year of service (change of environment and occupation). A traumatic origin was suspected in a small number of cases (410). Expectant treatment consisted in the administration of opium, or of opium and cathartics. Operative treatment was most often limited to opening and draining abscesses. All the cases of diffuse peritonitis died. The author is in favor of early operation in every case, but he says that as yet this standpoint is not generally accepted in the army. Leucocyte counts in 400 cases showed that 15,000 or more white cells were in favor of abscess formation, but this could not be used as a guide for operative intervention.

The Diseases of Infancy and Childhood. *Designed for the Use of Students and Practitioners of Medicine.* By HENRY KOPLIK, M.D. Second Edition, Revised and Enlarged. Royal octavo; 885 pages; 184 engravings; 33 plates. New York and Philadelphia: LEA BROTHERS & Co., 1906.

The second edition of this volume shows numerous changes and additions necessitated by recent advance in pediatrics. The author's aim has been to present the subject concisely and in a practical form, which makes this book particularly useful to the young practitioner, although the comprehensive treatment of even very rare conditions, will induce specialists, as well, to consult its pages. The introductory sections contain much useful information of a general character. Infant feeding is clearly presented. The diseases of the new-born are very fully dealt with, especially affections of the umbilical cord. Of the specific infectious diseases, acute rheumatism hardly receives the attention its frequency and seriousness might entitle it to. The discussion of meningitis, on the contrary, is particularly complete. The chapters on diseases of the digestive, respiratory and circulatory systems are very instructive, but they cannot be subjected to a detailed review. The sections on the constitutional diseases, affections of the ductless glands, of the blood and of the nervous system are complete; this applies especially to the rarer conditions, of which excellent examples are cited.

The illustrations, charts, etc., scattered throughout the volume are almost all from the author's cases and are well executed. The exact description of therapeutic details, practical instruction in the administration of enemata, in gavage, in the performance of thoracocentesis, lumbar puncture, etc., will be appreciated by many.

The author is very conservative in the use of drugs, both as to their choice and their dosage. In diseases, such as whooping-cough, in which innumerable preparations have been recommended, he pins his faith to a few remedies that have proven of value in his hands.

Each section contains references to collateral reading, although little of the literature after the year 1902 has been included. On the whole Koplik's book should continue to prove popular, as it is a happy blending of practical and scientific pediatrics.

Nasal Surgery, with Operations on the Nose and Throat. By BEAMAN DOUGLASS, M.D., Professor of Diseases of the Nose and Throat, N. Y. Post-Graduate Medical School and Hospital. Royal 8vo; 256 pages; 68 plates. Philadelphia: F. A. DAVIS Co., 1906. Price, $2.50 net.

This is an excellent book, especially to be praised on account of its clearness in the description of the topography of the accessory sinuses. It consists of ten chapters, all profusely illustrated with admirable plates. The first chapter is devoted to a general anatomical study of the nose; the second, third, fourth and fifth, to the various accessory sinuses; the sixth to Deflections of the Nasal Septum: Operations for Nasal Deformities: Paraffin Injections; the seventh to Turbinectomy; the eight to the Tonsils, Adenoids, and Uvula; the ninth to Exostoses and Synechiæ; the tenth to Laryngotomy and Tracheotomy.

While the author has been rather too brief in the description of the technics of some of the operations, and the submucous resection of the septum has been slighted, the book is to be commended as a valuable guide in the modern operations of the upper air passages.

The Four Epochs of Woman's Life. Maidenhood, Marriage, Maternity, Menopause. A Study in Hygiene. By ANNA M. GALBRAITH, M.D., New York, Author of "Hygiene and Physical Culture for Women." Second Edition. Revised. 12mo.; 244 pages. New York, Philadelphia and London: W. B. SAUNDERS & Co., 1905. Price, $1.50.

This edition is marked by the addition of a section on The Hygiene of Puberty, one on Hemorrhage at the Menopause a Significant Symptom of Cancer, and one on The Hygiene of the Menopause. It is to be regretted that the author did not take advantage of the opportunity afforded by the preparation of a new edition, to reduce her text to a form more easily comprehensible by the laywomen for whom it is intended. In her preface she notes the difficulty of writing such a book as this without employing technical terms. While this is largely true, a comparison with such a book, for example, as Griffith's "Care of the Baby" shows that Dr. Galbraith has exaggerated the difficulty. Surely, simpler expressions could be found to take the place of such words as *etiology, therapeutics, hyperemic, incontinence,* etc. One ought not to find in a book written for the laity such a sentence as this: *"Other atrophic changes in the genitalia are shriveling of the vulva, with prolapse of the vagina or uterus from relaxation of the ligaments and loss of the natural support afforded by the changed perineal body."* This must be "all Greek" to the lay reader, and more so since neither in the glossary nor in the brief chapter on anatomy, does the author afford information concerning what *the perineal body* may be. It seems out of place in this book also, to refer, as such, to Lawson Tait's theory of menstruation, and to Stephenson's wave of "supplementary nutrition." In the chapter on The Menopause the author again strays afield in entering upon theoretical histological and physiological studies. Thus, *"Peuch found that in one case the ovaries were of normal size three years after the establishment of the menopause. Kiwisch described the structural change in this gland as*

consisting, on the one hand, of an increase of the connective tissue stroma; and, on the other hand, the Graafian vesicles themselves undergo retrograde change..... Napier believes that the ovaries secrete a substance which aids in determining menstruation....."

These references, and the high-sounding nomenclature mar the book, but do not destroy its very evident usefulness. It is written in a sober, earnest vein. If we except one or two statements in which the author appears a bit dogmatic, it is entirely trustworthy, and even without excluding the statements referred to, its teachings may be regarded as safe to follow. To women who seek information on sexual hygiene this little volume may be sincerely recommended.

The Doctor's Recreation Series. CHARLES WELLS MOULTON, General Editor. Volume XI. **A Biographical Cyclopedia of Medical History.** Akron, Ohio: THE SAALFIELD PUBLISHING CO., 1905.

Unlike many others of this series, this volume is not one of mere interest or amusement, but aims to be a book of reference. Its plan is excellent—a biographical cyclopedia of famous medical men, and a history of the development of medicine. Unfortunately the execution is not as good as the plan. The first half of the book—about 200 pages—is devoted to the biographies of those men of medicine, ancient and modern, who have left their marks on the developing science. Physicians still living are not included in these sketches. The scope of this biographical index may be indicated by citing that a sketch of the life of Major Walter Reed, who died in 1902, is included. If we excuse the omission from this "cyclopedia" of the name of von Mikulicz, because his death was less than a year ago, can we, however, excuse the omissions, in a work of so ambitious a title of the names of Billroth, O'Dwyer, Meigs, Tait, Pirogoff, Chopart, Velpeau, Lieberkühn, Morgagni, and several others!

The second half of the volume (170 pages) consists in a History of Medicine from its Origin to the Commencement of the Nineteenth Century, by J. Bostock, M.D., F. R. C. S. Each of the thirteen chapters is preceded by a brief digest, but this cannot be taken to serve the place of an index—of which there is none. This history presents the facts already familiar to us by reason of several other—and some of them more exhaustive—histories. A vastly greater service would have been done the profession if there had been presented here, instead, the as yet unwritten *history of medicine during the nineteenth century*,—the development of scientific medicine in Germany in the fifties and sixties and the later, and even more brilliant contributions of all the civilized countries. So rapid, and so astonishing, has been the advance of medical science within the last generation, that "we cannot see the trees, for the woods."

A Manual and Atlas of Orthopedic Surgery: Special and General. *Including the History, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment of Deformities.* By JAMES K. YOUNG, M.D., Associate in Orthopedic Surgery, University of Pennsylvania; Professor of Orthopedic Surgery, Philadelphia Polyclinic, etc. Quarto; 720 illustrations; 942 pages. Philadelphia: P. BLAKISTON'S SON & CO., 1905. Cloth, $10; half-morocco, $12.

This huge volume is, as it was no doubt intended to be, a "handsome" book. And therein lies its chief defect. The author and the publisher have overshot the mark. We hesitate to criticise with severity a work that represents such a large expenditure of effort and of money, and yet we cannot believe that its usefulness will prove proportionate to these expenditures.

We would not deprecate artistic bookmaking, but we do deplore the production of those medical books of which the most striking feature is their bulk. Such a book may gratify its author's vanity but it seldom proves satisfactory to his colleagues. The Standard Dictionary defines *manual* as "A compact volume; handbook." However much praise may be bestowed on Dr. Young's work as an "atlas," it is hard to see how he can expect the profession to seriously accept so huge and heavy a volume as a "manual." It is altogether a pity, for the great bulk and the large cost of the book will prevent many from buying it and enjoying its really excellent features. By reducing some of the illustrations, choosing less heavy paper and spacing the type less wide, the book might easily have been brought within the limits of a moderate-priced and convenient volume; and its attractiveness would have been enhanced, rather than sacrificed.

The conception of the work is an excellent one; and if the reader can dispose himself and the book in such positions that the awkwardness and discomfort of the perusal are minimized, he may prepare himself for a real treat. Pictorially, the book is most interesting and no one can study the illustrations without much profit. They are very numerous and, with the exception of many of the reproductions of skiagraphs, they are of a high order of excellence. With very good judgment the author has selected the illustrations from various sources, but those most interesting clinically are chiefly from his own cases. The book indeed presents a pictorial survey of orthopedics—the clinical and the pathological features of the various lesions, the methods of their diagnosis and of their treatment. Perhaps the author was a little too zealous. Here and there his work has rather the appearance of a "picture-book," than of an atlas. Some of the illustrations are needlessly large, and a few—only a few, however—are unnecessary. If illustrations of "articles made by defective children" have a logical place in an atlas of orthopedics, surely a whole page need not have been given over to several cuts, each showing many of these articles. Again, the author calls attention to the toes in the statues of Hermes of Praxiteles and of a Gladiator; and there are reproduced half-page photographs of these statues, in both of which the toes are scarcely distinguishable. It is surprising in a work of this character, in which the 720 illustrations are the most attractive feature, that there is neither a list nor an index of these illustrations! The general index, however, gives evidence of having been carefully prepared.

The book is divided into two parts—general, and special orthopedic surgery, respectively. The text, like the illustrations, covers practically the whole field of orthopedics. The first three chapters deal with History, and with General Etiology, Pathology, Classification and Statistics of Deformity. Why a section on the General Etiology, Pathology, *and Treatment* of Tuberculous Joint Disease should have been thrust into Chapter II, it is very difficult to see. The author refers to the importance of fresh air and good hygiene as adjuvants in the treatment of tuberculous disease, but he does not describe the open-air life that may be *curative* of some cases.

The descriptions of the clinical aspects and diagnosis of the various diseases and deformities are excellently drawn and amply fulfil the purpose of the work. Indeed, some sections deserve especial praise, e. g., that on the differential diagnosis of sarcoma of the spine. The brief sections on Spondylitis Deformans and on Displacement of the Sacrum are also noteworthy.

We have said that this book is a handsome one. While the typography, as a whole, is most pleasing, in its details it shows many imperfections that should have been corrected.

Practical Dietetics, with Reference to Diet in Disease. By ALIDA FRANCES PATTEE, Formerly Instructor in Dietetics, Bellevue Hospital Training School for Nurses; Special Lecturer on Dietetics at Bellevue, Mount Sinai and Hahnemann Hospitals Training Schools for Nurses, New York City. New York: Published by the author. Price, $1.00 net.

This very practical and altogether excellent little manual has met with remarkable success. It has been adopted by many training schools, as a teaching manual, and at all the U. S. Army posts. In much less than three years it has run through three large editions. In announcing the early appearance of a fourth issue we believe it hardly necessary to comment further on a book that has been so widely reviewed and is so generally known.

Progress in Surgery.

Traumatic Inflammations of the Knee Joint (*Ueber die traumatische Entzündungen der Kniegelenkes*). HOFFA. *Berliner Klinische Wochenschrift*, No. 1, 1906.

Hoffa about one year ago pointed out a symptom-complex consisting of sudden attacks of acute pain, functional disturbances of the joint and typical signs of incarceration (of joint bodies). Objectively, in these cases, atrophy of the quadriceps muscle, swelling on either side of the patellar ligament, pseudo-fluctuation, and crackling sensation on palpation, were noted. He has now treated 43 such cases. The etiological factor is a series of repeated minor traumata, which, if sufficiently severe produce serous or bloody effusions into the joint cavity. Especially if the symptoms are mild, the patient neglects them, and as the insults are repeated well marked pathological changes take place. There is an increase of the small bloodvessels of the subsynovial layer, new formation of synovial villi, lymphocytic perivascular infiltration, and exudation of fibrin on the surface of the serous membrane. As the process becomes more chronic, fibrous changes predominate, most marked in the subpatellar fatty cushion, but also affecting the entire joint to a minor degree. Similar changes occur in arthritis deformans, when loose bodies are present, etc. By distending the joint with oxygen gas reliable x-ray pictures of the soft parts may be obtained.

In the acute traumatic case the usual conservative therapy is indicated. In chronic cases, surgical intervention is the most certain and rapid treatment. Partial arthrectomy with the object of removing redundant folds, villi and hypertrophic, inflamed, fatty masses, which on motion rub against one another, or are caught between the joint surfaces, is the proper procedure. An incision along the inner border of the patella usually suffices; if not, an external incision may be added. Especial attention should be directed toward all hypertrophic tissue on either side of the patella, to the synovia about the condyles of the femur and to the upper joint recess. The skin suture includes the fascia; if there is much hemorrhage a small drain is placed in the lower angle of the wound. The limb is kept two to four days in a splint; the sutures are taken out on the eighth to tenth day. Massage and gymnastics complete the treatment, the patient getting up on the twelfth to fourteenth day, the entire course of treatment being completed by the end of six to eight weeks. Strong, healthy individuals, anxious to regain full activity, are favorable subjects; weak patients, lacking energy and ambition, are less favorable. Of the 43 cases only two were not successful; in a weak, nervous woman partial limitation of motion resulted; in another, after the dusting of the joint with iodoform powder (immediately followed by marked swelling), complete ankylosis could not be prevented.

Resection of the Shoulder Joint (*Die Resektion des Schultergelenks*). A. CATTERINA. *Zentralblatt f. Chirurgie*, No. 2, 1906.

By this method the deltoid muscle and circumflex nerve are preserved from injury. A skin incision four to five and a half inches in length is made, starting one and a half to two inches above the junction of the outer and middle third of the clavicle, downward in the groove between pectoralis major and deltoid. The clavicle is exposed and freed of its periosteum where the section is to be made. Two holes are bored in the bone (used later for suturing) and the clavicle is then sawn through. The distal fragment is strongly rotated outward and the insertions of the trapezius, and subclavius muscles, and the coraco-clavicular ligament are detached. The clavicular portion of the deltoid remains attached to the outer fragment. By this method free exposure is obtained. After completing the resection the clavicle is sutured and the soft parts again replaced.

Injuries in the Vicinity of the Elbow Joint. JAMES E. MOORE. *St. Paul Medical Journal*, January, 1906.

The main points emphasized in this paper are the importance of the x-ray in the diagnosis, and the great value of open operation in many cases. Fractures in this region are important because of the frequent sequel of ankylosis. A sprain of the elbow is comparatively rare, and a diagnosis of this condition should be made only after the most thorough examination by every means at our command. Separation of the lower epiphysis of the humerus may be easily confounded with dislocation because the deformity is the same; after reduction, however, the tendency to relapse is not so marked as in cases of fracture. A positive diagnosis can be made only by the x-ray. When a diagnosis of backward dislocation of the radius and ulna has been made and relapse follows reduction, the chances are, either that the diagnosis is wrong or that the dislocation is complicated by a fracture of the oronoid process. Dislocation of the head of the radius forward is usually easy; it should be reduced by pressure and the arm held in extreme flexion for three to four weeks. A subluxation of the head of the radius occurs quite frequently in young children, and is usually caused by lifting the child by the hand. It should be distinguished from fracture by the absence of crepitus, although flexion is still impossible. Fracture of the head of the radius is rare and can be diagnosed only by the x-ray. The arm should be dressed either in extreme flexion or at right angles. Fractures through the condyles into the joint are the most difficult to diagnose; here the x-ray is of paramount value. Reduction is made by manipulation while extension is being made on the hand and counter-extension on the shoulder. Moore obtains the best results in these cases by placing the arm in the straight position. If, however, ankylosis cannot be avoided, it is better to dress the arm in the right angled position. If the fragments cannot be maintained in the proper position by ordinary methods, operation is advisable. In all fractures about the elbow joint, the author feels positive that passive motion should not be employed for three or four weeks, until the fracture has united. Plaster of Paris is the favorite material employed by the author, although he uses tin splints very largely.

The Radical Cure of Severe Femoral and Inguinal Hernia. J. H. NICOLL. *Annals of Surgery*, February, 1906.

The three chief points of the proposed operation are: the employment of the sac as an intraabdominal buttress over the internal opening of the canal; the use of the pubic ramus as a fixed point to close the canal; and the application of a bone instead of a fascial suture. This method of operating need be applied only in severe cases, particularly those of the inguinal form.

The chief steps of the femoral operation are: full exposure of the sac; splitting it longitudinally from fundus to neck, after emptying its contents, and carefully freeing the tissues surrounding the neck; making an opening in one half of the sac through which the other half is drawn (it can first be twisted) to interlock and close the peritoneal opening. The sac is bunched up and reduced subperitoneally in the free space previously made for it. An incision to the bone is made from the femoral vein to the pubic spine, the periosteum, the origin of the pectineus and the fascia lata being turned down. The pubic ramus is drilled in two places near its upper margin. Two absorbable ligatures are passed through the one hole, taking in Poupart's ligament at two levels, in the form of a mattress suture, and passed out of the second hole. Upon tying, the ligament is thus drawn down to close the hernial canal. The detached pectineus and fascia are resewn into place. If no bone drill is at hand, the incision on the ramus should be made nearer the posterior superior margin of the pubic bone and a periosteo-fascial flap obtained, which can be used as a fixed point toward which to draw down Poupart's ligament.

In all large inguinal herniæ, with relaxed Poupart's ligament this same method may be advantageously used. The sac is treated as in femoral hernia, a bone incision is made as in the former variety, extending from the femoral vein to the pubic spine. Two drill holes passing transversely through the pubic bone permit the passage of two mattress sutures which take a firm bite of the internal pillar (conjoined tendon) which is thus drawn down to the pubic bone. The relaxed Poupart's ligament is now sutured to

the anterior surface of the internal pillar with interrupted stitches.

The Radical Cure of Direct Inguinal Hernia. G. G. DAVIS. *Annals of Surgery,* February, 1906.

Two forms of hernia may be distinguished, one which enters the inguinal canal low down, protruding to the outer side of the rectus muscle and its sheath; the other starting nearer the internal inguinal ring and pushing before it the weakened conjoined tendon. For this latter variety the author practically uses the accepted form of operation—mobilization of the rectus, which is sutured to Poupart's ligament and then reinforced by drawing down the arched fibers of the conjoined tendon.

In the other variety, especially in old herniæ, the coverings of the spherical sac cannot be separated into layers, as these layers have become atrophic and fused. Here Davis makes a transverse incision across all the covering layers and overlaps the tissues, as in the operation for umbilical hernia described by Mayo. The apex of the lower flap is sutured to the posterior surface of the base of the upper flap, which is then drawn down and sutured into place so as to overlap. The peritoneum is usually not separated before performing this maneuver.

A Transverse Incision for the Removal of the Appendix. G. G. DAVIS. *Annals of Surgery,* February, 1906.

The author discusses the various incisions now practiced, such as that through the sheath of the rectus, the muscle being pulled aside (Battle, Kammerer), with modifications proposed by Lennander and Edebohls, and the McBurney intermuscular operation, modified by Harrington and by Weir. According to Davis these have various defects, such as injury to the motor nerves of the rectus muscle, hernia due to drainage, difficulty of draining the abdominal wound after infection, etc. J. W. Eliot, in 1896 described a transverse incision, which was developed by the author independently, but at a later date. Davis in easy cases makes a transverse incision one and one-half inches long, whose center is on the semilunar line, at the level of the anterior superior spine. The external oblique aponeurosis is divided in the line of the skin incision, but obliquely to the direction of its fibers. The underlying fibers of the internal oblique and transversalis are parted—not cut. The peritoneum is now opened, and the incision carried inward through the anterior layer of the rectus sheath; the rectus muscle is drawn toward the median line; and the fascia and peritoneum thus exposed are also incised. This gives a triangular opening with a base three-quarters of an inch, and sides one inch long. In difficult cases the incision may be extended outward to the anterior superior spine, and inward to within one inch of the median line. This allows of the introduction of the whole hand, the opening being four to five inches long. The center of the wound corresponds to the base of the appendix. No large arteries or important nerves are injured. If drainage is necessary, the drain is placed in the outer angle of the wound, where it passes through the thick muscular mass of the internal oblique and transversalis muscles, thus minimizing the danger of hernia.

Common-Duct Cholelithiasis: Its Symptoms, Complications and Treatment. A. W. MAYO ROBSON. *Surgery, Gynecology and Obstetrics,* January, 1906.

The symptoms of biliary concretions differ as to whether the stones are in the gall bladder, cystic duct or common duct. In rare instances large stones in the cystic duct may press on the common duct and portal vein, causing jaundice, ascites and distended gall bladder, as in malignant disease of the pancreas.

In 40 per cent. of Robson's cases the common duct was involved; in 80 per cent. of these, the stones were multiple. Usually there are attacks of pain repeated for years, often followed in twenty-four hours by jaundice, which is rarely as deep as in carcinoma. The gall bladder is very rarely distended. In the urine, if the pancreas is involved, acicular, rosette-shaped crystals are found. Such crystals commonly dissolve in dilute sulphuric acid in from 15-40 seconds, if due to pancreatitis, but require 1-5 minutes in cases of carcinoma (Cammidge's test). In cancer or in stones involving the pancreatic part of the duct, the feces are bile-free and contain much neutral fat and muscle fibers, and the reaction is acid. With a loose common duct stone acting like a ball-valve, ague-like paroxysms occur, often with sufficient regularity to simulate malaria. Even when no distinct jaundice is found the conjunctiva may be icteric. In common duct attacks the pain is felt in the midscapular, epigastric, or more rarely, in the *left* hypochondriac region. X-rays have never proven of value to the author in detecting calculi. Twenty-eight possible complications are mentioned, chief of which are various forms of ileus, local peritonitis with adhesions, general hemorrhages, strictures, fistulæ, abscess of the liver, gangrene of the bile passages with general peritonitis.

A complete description of the author's method of choledochotomy is given. The incision is made through the fibers of the right rectus and extends to the costal margin along the space between ensiform cartilage and ribs. The liver is tilted upward, placing gall bladder and common duct almost in a straight line. The common duct is incised over the concretion, the duodenum probed, and the hepatic ducts explored with the duct spoon. If there is no marked induration of the pancreas, the common duct is sutured; if there is pressure on the duodenal end a drain is sewn into the incised duct. Usually it is wise to drain the gall bladder and the kidney pouch (tube) as well. The abdominal wound is closed by layer suture. In the chronic jaundice cases, in which hemorrhage is particularly to be feared, calcium chloride should be given for two to three days preceding operation, and hemostasis must be very carefully attended to. Before the author adopted his present technic his mortality in choledochotomy was 16.2 per cent. Since he began to thoroughly expose the bile passages it has dropped to 3.9 per cent. (76 cases).

Remarks Upon the Surgery of the Common Bile Duct. B. G. A. MOYNIHAN. *Lancet,* January 20, 1906.

Moynihan's paper is a very complete summary of the present status of surgery of the common bile duct. Rupture of the duct may be either traumatic or the result of disease. The rupture is generally a very large one, or a complete division, and in most cases is due to kicks or blows, or to injury by vehicles. The extravasated bile gives rise to a localized peritonitis, resulting in encapsulation. It is interesting to note that suppurative peritonitis, local or general, never occurs. This is due to the fact that the bile duct contains but very few toxic organisms. The symptoms of rupture of the common bile duct are jaundice, absence of bile in the stools, the gradual distension of the abdomen and wasting. In most cases the accident occurs in children. Treatment consists in evacuation of the newly formed bile cyst and suture of the duct. If the duct is completely cut across, the ends may be sewed together, or the distal end may be tied and the proximal part inserted into the duodenum. In some cases the exuded lymph has been found to completely close the opening, so that no rent at all could be found at the time of operation. Rupture of the common duct as the result of disease usually arises from an ulcer that has formed as the result of long continued obstruction by stone. In some cases the rupture is caused by ascarides or by foreign bodies. Rapid death from general peritonitis results in all the cases that have been reported. In discussing obstruction of the common duct by stones, the author follows well established lines. Two points that are not commonly appreciated are emphasized. First, only in the greater minority of cases (1 to 4 in the author's cases) is the obstruction complete; the majority of the cases are of the so-called ball-valve variety. The second point is the great importance of Courvoisier's law in the diagnosis of the nature of the obstruction in the common duct. Strictures of the duct may be congenital or acquired. The former are mostly of pathological interest, although a case of Treves' is recorded in which a cure was obtained by cholecystenterostomy. Acquired stenosis is generally due to ulceration from stone; in some cases typhoid fever, syphilis or ulceration of the duodenum is the etiological factor. Carcinoma of the bile duct is rare and in about one-third of the cases is associated with gall stones. The insidious onset of jaundice and dilatation of the gall bladder are the most important diagnostic signs. In some cases the growth may be removed, the divided ends may be

ligatured and cholecystenterostomy done. It is rarely possible to suture the divided ends.

The Treatment of Acute Peritonitis (*Ueber die Behandlung der akuten Peritonitis*). K. G. LENNANDER. *Deutsche Zeitschrift für Chirurgie.* January, 1906.

The author states his views and the results of his large experience in an exhaustive paper. Some of his treatment will not appeal to the American reader. He, of course, advocates early diagnosis and early operation before perforation and intestinal paralysis had occurred. Before and after operation the patient is placed in a semi-sitting posture, with the foot of the bed raised about twelve inches. The incision should be liberal, often multiple in diffuse conditions (lumbar, transverse and other incisions). If intestinal paralysis has already taken place, one or more enterotomies (with "milking" out of the intestinal contents) may be made; enterostomies—above the paralyzed portion, in its central part and in the cecum—according to Witzel's method, using soft rubber tubes, may be indicated, or in desperate cases resection of ½-2 meters of paralyzed gut. Free irrigation with normal salt solution of 104° should be used in early peritonitis, especially if the central parts of the abdomen (root of the mesentery) are involved. Where much exudate is present the peritoneal absorptive power is evidently reduced and irrigations are well borne. Lennander believes in free drainage and in encouraging exudation from the peritoneum. Cotton wicks with soft rubber tubes centrally, and surrounded by rubber tissue (old rubber gloves) are to be preferred. The drains may be slowly removed, one by one, from the 12th hour on. It is well to put a rubber catheter into the sinus as the drains are withdrawn and to use hydrogen peroxide. Large and repeated saline infusions during and after the operation are of use. The heart (edema of the lungs) and kidneys are the determining factors as to the frequency and quantity of these injections. When cecal fistulæ have been made normal salt solution with 10%-5% grape sugar and 5%-2% alcohol may be given through them. Frequent rectal irrigations relieve the patient from gas and part of the fluid may be absorbed. For a few days subcutaneous alimentation (100-200 c.cm. olive oil, or 2 liters of salt solution with 160 gms. of grape sugar and 40 c.cm. of alcohol) may prove effective. The after-treatment must seek to spare the intestine. Stomach washing, irrigations through enteristomy and colostomy wounds, strychnine, physostigmine, etc., no food by mouth until the gut is no longer paralyzed, watchfulness concerning kinking of the gut from adhesions, are all discussed.

Shoes (Ueber das Schuhwerk.) L. v. LESSER, *Medizinische Klinik,* No. 5, 1906.

The author has previously called attention to the connection underlying hyperidrosis, flat foot and primary varicose veins. In this present article he does not refer to severe cases of flat foot in which bony changes and complete breaking down of the arch have occurred, but to milder cases, which, however, usually cause the worst functional disturbances, and the most pain. From a theoretical standpoint the foot may be divided into two halves, the division taking place at Chopart's joint (calcaneum and astragulus behind, and the cuboid and navicular bones, etc., in front). The posterior axis runs along the center of the os calcis, the anterior one from the end of this bone to the big toe, the two forming an obtuse angle. When weakening of the arch occurs the forces which prevent the posterior half of the foot from abducting, and which increase the adduction of the anterior half, i. e., increase the acuity of the above-mentioned angle, serve to overcome the disease. Among unfavorable factors are machine-made stockings, in which right and left foot are the same, heavy weighing bed-quilts which increase abduction, abducted position in standing, marching, etc.

Shoes should be designed to increase the angle between the anterior and the posterior half of the foot; the outline of the sole should therefore be taken when the body weight is not superimposed. There should be a broad welt reaching back as far as the os calcis along the inner side of the shoe. In the upper, the great toe should be given the most room and the center of the tip should not be the highest and most roomy part, for thus the big toe is encouraged to assume a valgus position and harmfully crowd the other toes outward. Bending upward of the anterior part of the sole is also harmful; heels should be low and flat, for although high heels may temporarily relieve the pain of flat foot, they end by increasing the deformity. In heavy people it is well to place a steel strip in the sole, along the inner side, to prevent sagging downward. In mild cases these measures will suffice; in severe ones plates will be required, but unless provision is made to increase adduction (by properly constructed shoes) the plates will prove useless.

Hemorrhage After the Removal of the Tonsils. FRANK M. CUNNINGHAM. *Southern Medicine and Surgery,* January, 1906.

Before the age of twelve, hemorrhage after removal of the tonsil practically never occurs; after this age hyperplastic changes in the tonsils may prevent the proper retraction of the arteries, and this is the cause of most hemorrhages. Occasionally hemorrhage arises from a wound in one of the pillars of the fauces; for this reason, the author advises that in all cases the pillars should be carefully separated from the tonsils by a special instrument. The removal of large, fibrous tonsils should be accomplished with a cold snare, not with the guillotine. When hemorrhage does occur, examine the parts carefully; and if the bleeding is from an artery, it should be caught and tied. When there is general oozing, the author uses a solution of iodoform in compound tincture of benzoin (℥i to ℥i). Adrenalin, peroxide of hydrogen, ice cold Dobell spray, silver nitrate, etc., may also be tried. The galvano-cautery is valuable in small non-arterial hemorrhages from the pillars or in any small area of bleeding from the tonsils. In large areas it is usually ineffectual and may even aggravate the bleeding. Sometimes a double cross suture through the two pillars, leaving a small recess posteriorly for packing with gauze may prove serviceable in intractable hemorrhages. Finally, the author reports a case in which nothing but the tonsillar hemostat proved effectual.

Branchial Cysts of the Neck, Tonsillar in Structure (*Les Kystes Branchiaux Du Cou à Structure Amygdalienne*). F. HERRIER & P. LECÈNE. *Revue de Chirurgie,* No. 12, 1905.

In two medium-sized cysts of the neck, which had developed in young individuals in the course of a few years, the following structures were found to compose the cyst walls: facing the cyst lumen a layer of stratified pavement epithelium containing no horny or elastic layer, a thick stratum of lymphoid tissue with germ centers and with crypts extending to the surface, and finally an outside layer of fully developed connective tissue. The resulting picture is that presented by the tonsil, and the authors desire to separate these cysts from the ordinary branchial dermoids. Accordingly we have (a) *True branchiogenetic dermoid cysts,* lined with skin containing a hornified layer, hairs, sweat and sebaceous glands. These cysts arise usually from the second branchial cleft and may occupy the entire carotid region. (b) *Tonsillar branchial cysts,* the walls of which have been described above. The lining epithelium may in parts be ciliated. These cysts probably arise from the entodermic layer of the second and third branchial clefts. The cysts are either submaxillary or in the anterior carotid region. (c) *Thyroid branchiogenetic cysts,* lined with ciliated epithelium, rarely with stratified pavement epithelium (without cornified layer), and containing somewhere in the cyst wall thyroid remains. These cysts are usually median in location and represent remains of the thyro-glossal duct. There are no so-called "glandular" cysts of the neck, described by some authors who tried to account for the lymphatic structures in the cyst wall by assuming either a primary or secondary involvement of the cervical lymph glands.

The Treatment of Some Forms of Embryonic Growths by Electrolysis. C. R. DICKSON. *Canadian Journal of Medicine and Surgery,* February, 1906.

This method of treatment which, as is well known, affords better results with less scar formation than any other, is described by the author as follows: When destructive action is aimed at, the positive pole is used; when, however, ab-

sorption is desired, the negative pole is employed. The monopolar method is usually preferable with platinum-iridium needles for anode puncture, gold needles for cathode puncture; and the perforated brass plaque or brass wire gauze, faced with absorbent felt, and backed with rubber sheeting for the indifferent electrode. Zinc-amalgam needles are sometimes of value as active positive electrodes, especially in cavernous angiomata. In dealing with nevus pigmentosus, if hairs are present these must first be removed, otherwise they may grow through the resulting cicatrix. The active electrode is attached to the negative pole. In the smaller nevi, the needle is introduced parallel to the surface, and just sufficient current is used to blanch the part. This is repeated until the entire nevus has become blanched. Sometimes this can be done through one opening; about 1-5 milliampères are usually necessary, but in larger nevi more current is necessary, and in such cases it should be turned off before each introduction. In nevus vasculosus simplex, the growth should be attacked from the edges, the negative pole is used and sufficient current is applied to cause blanching. In angioma cavernosum, the monopolar method is used with the platinum-iridium or amalgamated zinc needle attached to the positive pole. The bipolar method with both needles may be preferable in some cases. In the latter instance the negative needle is inserted into the supply vessel, while the positive is inserted into the redundant tissue. It is rarely necessary to use more than 50 milliampères in these nevi. A second application should not be made until the first has healed, and the author concludes with the warning, "better do too little and repeat, than too much and repent."

A New Anoscope. T. CHITTENDEN HILL. *Journal American Medical Association,* February 24, 1906.

For the treatment of ulcerations, abrasions, etc., of the anal canal the specula in common use have not at all times been satisfactory. Hill's speculum consists of a straight glass tube with an oval window in the side. The end is rounded and punctured by a small hole which allows air dilatation of the rectum. The handle is detachable. The distal end of the tube is smeared with vaselin and pressed firmly over the anal orifice; then, as the patient strains down, the instrument slips easily past the sphincters. By gently rotating and partially withdrawing the tube the whole anal circumference can be thoroughly explored without discomfort to the patient. The round tube is easily introduced when there is spasm of the sphincters. The edges of the oval window are so smooth that rotating and withdrawing it does not pinch the mucous membrane, and what is more important, the mucous membrane anterior to the part being examined is firmly supported, and thus a good view is obtained.

The Treatment of Joint Tuberculosis in the Open Air in a City Hospital. RUSSELL A. HIBBS. *N. Y. Medical Journal,* February 24, 1906.

The treatment of joint tuberculosis in the open air is being tried in two cases at the New York Orthopedic Hospital. One is a boy eleven years of age, having extensive spinal disease in the cervical and in the dorsolumbar regions, with suppuration in connection with the latter. Two abscesses discharge profusely, one on either side of the spine posteriorly. The second is a boy four years of age, with dorsolumbar disease and double psoas abscess, the one on the right side discharging. Both of these patients were growing steadily worse in spite of all that could be done for them in the wards. Their temperatures continued high and their appetites poor; they were steadily losing flesh and it was evident that unless some change for the better occurred they must soon succumb. It was decided to try keeping them in the open air on the roof of the hospital. Two beds were placed there, and for over three months they have spent most of each twenty-four hours there (being brought to the wards only during the morning for dressings, adjustment of apparatus, etc.).

There has not been seen the slightest ill effect from their remaining so long in the open air. The attendance of a nurse and an abundance of warm bed clothing have kept them from suffering from the cold. After the first night, they slept better, took more nourishment, and their temperature showed a marked decline. Their condition has steadily improved in every way, they have gained flesh, their temperatures are practically normal, they take an abundance of food, and the discharge from their abscesses has diminished. While these two children are seriously ill, their condition has been transformed from one of hopelessness to one in which the chances of ultimate recovery are immensely better.

Acute Osteomyelitis: A Plea for Early Diagnosis. EMIL KING, *American Medicine,* January 20, 1906.

King gives a short review of this uncommon but frequently overlooked disease. As predisposing causes, the author mentions diseases that lower the vitality, such as measles, scarlet fever, typhoid, influenza, furunculosis, gastro-intestinal disorders, etc. The exciting cause is necessarily the entrance of bacteria, through a wound; in many cases the wound is invisible, or it may be merely a slight scratch or a puncture, a carious tooth, and, in infants, an infected umbilicus. The staphylococcus and the streptococcus are the germs most frequently found in the pus; less commonly the bacillus pyocyaneus, the typhoid and influenza bacillus. The earliest symptom is pain; this is described by the patient as deep and boring and is most frequently localized over the epiphysis or site of the nutrient artery; the pain is accompanied by chill and a rise of temperature. Very soon local redness of the skin ensues. The bone is very tender, and in the long bones a very important diagnostic symptom is edema of the subcutaneous tissues over the seat of infection. Muscle contractures and spasms develop in a couple of days and all bodily movements are usually accompanied by excruciating pain. Ultimately, pus breaks through the periosteum and a subcutaneous cellulitis develops. In some cases the infection is so virulent that the patient dies within the first day or two, before a diagnosis can be made. The disease is most frequently confounded with acute rheumatism, but if the above points are noted the diagnosis can, as a rule, be easily made. An important differential sign is obtained by tapping the bone in its long axis. In rheumatism the bone is not tender. Treatment is self-evident,—extensive osteotomy.

Fibroma Molluscum Gravidarum: A New Clinical Entity. SAMUEL M. BRICKNER. *American Journal of Obstetrics,* February, 1906.

Sometimes, in the fourth to the sixth month of pregnancy small, slightly pigmented, or non-pigmented sessile or pedunculated excrescences appear on the neck, thorax and below the breast of pregnant women. The lesions may be few in number or as many as forty to fifty. The size varies from that of a pin-head to that of half a split pea; the apex is pointed, at times digitate; the pedicle always retains the color of the normal skin, but the growth proper may be pigmented yellow to dark brown. The mucous membranes are never involved. A few weeks to months after delivery the growths disappear, leaving no trace behind, thus differing from the ordinary fibroma molluscum of the non-pregnant state. Pathologically the small tumors show a derivation from the papillary layer of the corium, and are soft fibromata. No treatment is required because of the spontaneous regression which takes place. The author has seen eight cases of this interesting condition, which, as an accompaniment of pregnancy, has not heretofore been described.

Remarks on the Dermatoses of Pregnancy. S. POLLITZER. *American Journal of Obstetrics,* February, 1906.

Under this caption must be included those diseases which occur chiefly during pregnancy; those whose intimate relation to pregnancy is shown by their disappearance after evacuation of the uterus; those transitory reflex, vascular and nervous dermatoses which are found with relative frequency in pregnant women not subject to them in the non-pregnant state, and finally the effect of pregnancy on pre-existing dermatoses.

Impetigo herpetiformis is fortunately very rare (20 cases), as it proves almost invariably fatal. Although several cases have been reported in the male, the occurrence of 75 per cent. of the cases in pregnant women seems more than a coincidence. *Herpes gestationis* is also rare; it may be sufficiently severe to require interruption of pregnancy. *Pigmentation* of the skin to a certain degree is physiological (e. g., linea alba and about nipples); when marked, especially on the face, it is known as *chloasma.* The secondary effects of pressure due to the enlargement of

the uterus, causing edema of the vulva and lower extremities, produce pruritus and then eczema, which are relieved when the uterine tumor disappears. The *neuro-vascular affections,* such as urticaria and erythema, are common, and some patients suffer from them only when pregnant. Whether this is due to some fault in the maternal or fetal metabolism, or to abnormal alimentary fermentation, as the result of pressure of the uterine tumor on the intestine, is undecided. Circumscribed *hyperidrosis,* particularly of the palms, is frequently noted. The relation of pregnancy to eczema, acne, psoriasis, etc., depends largely upon the etiology of these diseases. Pollitzer believes that the first two are infectious diseases, and that therefore the sole effect possibly due to pregnancy is from unfavorable changes in the circulatory apparatus (as pressure on the veins of the legs). Psoriasis certainly is not influenced by gravidity, some cases improving, others growing worse, during the course of gestation.

The Prevention of Fever in the Puerperium (*Ueber die Verhütung der Fieberfälle im Wochenbett*). P. ZWEIFEL. *Zentralblatt für Gynäkologie,* No. 1, 1906.

Based upon a report of 243 cases, Zweifel last year proposed the routine removal of blood clots from the vagina two hours post-partum, because the clots offer a favorable nidus for bacterial growth. Since then he has increased his statistics to 629 cases. Of these 49, or 7.7 per cent., developed fever. The method consists in introducing a speculum, several hours after the labor is completed, and removing all vaginal clots with dressing forceps and dry sponges. Where a perineorrhaphy has been performed he removes the blood by irrigation. The asepsis must be very exact, rubber gloves being employed. Elaborate statistics are offered in evidence to show the reduction in morbidity. The lochia is found greatly diminished in quantity and it ceases in a few days. The paper concludes with a discussion of the methods of asepsis and the various means by which infection is introduced.

An Uncommon Indication for Cesarian Section (*Eine seltene Indikation zum Kaiserschnitte*). BRUNET. *Zentralblatt für Gynäkologie,* No. 2, 1906.

Of the 18 cases of ruptured varices of the vagina during pregnancy, reported in the literature, 16 bled to death. Therefore it is fortunate that this accident is rare. The author reports the case of a young primigravida at term, in whom two severe hemorrhages occurred spontaneously. Admitted to the clinic, large varices of the labia were noted, and the bleeding points were located within the vagina in its anterior wall. These spots were clamped, but during the examination another varix was injured, requiring tamponage. Two days later the bleeding, upon removal of the packing, was so severe, that the vagina had again to be filled with gauze. That evening labor pains set in. The next day it was found that, without packing, a very copious hemorrhage was unavoidable. Six clamps were applied and firm tamponing. The patient had lost a great amount of blood through the successive hemorrhages. Typical Cesarian section was performed, resulting in the delivery of a normal child. Next day the varices still bled. Four days post-partum the bleeding entirely ceased, convalescence proving uneventful.

Report of a Cesarian Section, with Questionable Indication. PALMER FINDLEY. *Surgery, Gynecology and Obstetrics,* January, 1906.

A II-para, 37, had had a normal 7½ pound child four years before; two years later amputation of the cervix was performed, and one year after the operation she became pregnant. When seen by the author the patient was in labor 36 hours, was exhausted, and the fetal heart was 160 to the minute (R. O. P.). Vaginal examination revealed neither cervix nor cervical canal and many scars traversed the vaginal vault. The edematous tissue bled freely. The vagina was packed for the bleeding, and a 7½ pound live child was delivered by abdominal section. The uterus was not removed on account of the poor condition of the patient. Two weeks later a probe could be passed into the uterus through a minute opening amid the cervical scar.

Therapeutic Advances in Obstetrics. (*Therapeutische Fortschritte in der Geburtshilfe*). PROF. A. DÜHRSSEN. *Die Heilkunde,* January, 1906.

During the course of the last few years obstetrics has shown a surgical trend. Active measures are now taken for abortion, placenta previa, eclampsia; prophylactic version is practised for contracted pelvis; Cesarian section and operations for enlarging the diameters of the pelvis are now performed for relative indications, and the cervix is artificially enlarged. The problem of delivering an uninjured child, without harm to the mother has been solved. Vaginal Cesarian section can be performed during any part of the pregnancy, without the presence of labor pains. Dührssen describes the steps of this operation, the chief points being the anterior incision in the vagina, mobilization of the bladder and peritoneal fold and incision of the anterior wall of cervix and uterine body. Near term, an incision of the posterior cervical lip (with reflection of the posterior peritoneal fold) is advised. In primiparæ, incision of the perineum through the levator ani into the ischiorectal fossa may well precede the section of the cervix. Version and extraction, followed by exact suture, complete the operation.

The Gigli hebotomy (or pubotomy) serves to increase the pelvic diameters sufficiently to permit delivery when the conjugata vera are 6.75 cm. or more. This lateral section of the pubic bone lessens the danger of infection from the genital tract, avoids injury to the bladder and has been so simplified that it can be practised without outside assistance, except that of an anesthetist. Version and extraction should here also be employed. If the soft parts offer resistance the levator ani may also be incised. It is well to cut the pubis on the side toward which the occiput turns (thus on the left side in L. O. A.).

Dilatation by bags still remains a very useful, and in fact the most popular, measure with the general practitioner for bringing on or hastening labor. When the cervix has been absorbed, but the external os still remains closed, four incisions, best made between clamps which stop all hemorrhage if left *in situ* for a few minutes, at once remove this hindrance to expulsion of the child.

The Bossi method has been so severely condemned on all sides that its doom is assured.

Volvulus Testis. ROBERT C. BRYAN. *Virginia Medical Semi-Monthly,* January 12, 1906.

The predisposing cause of torsion of the testis is the so-called "floating testicle"; this preternatural mobility is aggravated by a loose, atonic scrotum, malposition, inversion or cryptochismus. The exciting causes are essentially the rolling around of the testis, which, in turn, is brought about by blows, strains, heavy lifting, etc. The direction of the torsion is almost always from without inward, the majority of cases showing about one and one-half turns. Two varieties are described by the author: (1) the acute recurring; (2) the volvulus gangrenosa. In the infant the symptoms are, flexion of thigh on the affected side, a swelling at the external ring or in the scrotum, which varies in size, and is extremely tender; there is no impulse on crying and the testis cannot be made out. In the adult, the onset is characterized by ultra-acute, nauseating pain which is referred to the testicle, the hypogastrium and kidney regions; vomiting occurs early; the temperature rises to 100°-101° F. The thigh is flexed on the abdomen; the testicle is acutely tender and lies in a horizontal position with the epididymis anterior; the point of constriction may be easily defined as a hard tender area above the globus major and continuous with the cord. In acute recurring volvulus, the attacks recur with greater or lesser frequency; in volvulus gangrenosa, the symptoms are the same, up to death of the parts, when the symptoms dependent on the gangrene and infection ensue. The diagnosis is sometimes very difficult, especially from strangulated hernia. In the latter, there is history of swelling first, followed by pain, in torsion the opposite is the rule; the other points of differentiation depend upon the previous history of hernia, the evidences of intestinal occlusion, the physical signs of the tumor and the presence or absence of testicular enlargement. Treatment may be operative or non-operative. The non-operative treatment consists in reduction of the torsion by external manipulation. This is usually difficult and may

even be impossible if the swelling lies within the canal. The operative treatment consists in reduction of the torsion through an open incision, followed by stitching of the fibrous coat of the testicle to the margins of the incision, in order to prevent relapse.

Tuberculosis of the Male Genito-Urinary System—A Review. J. A. PATTON. *Medicine*, February, 1906.

Genito-urinary tuberculosis is present in about 4.5% of all cases of tuberculosis. It is most frequent between the ages of 20 and 35 and is commoner in males. Primary tuberculosis of the testis is rare; most cases that come to autopsy usually reveal either an active or a healed focus of tuberculosis. In a large number of cases, Israel has found that the kidney is the first and only organ to be affected; the trend of opinion and experimental evidence seem to invalidate the possibility of ascending infections of the kidney. Next in frequency to tuberculosis of the kidney, is tuberculosis of the epididymis and testis. Primary tuberculosis of the prostate and seminal vesicles is exceedingly rare, but these are very commonly affected secondarily. No positive cases of primary bladder and urethral tuberculosis has been reported. A knowledge of the site of the primary infection and the route by which it travels to other organs is important, as a basis for therapy. The posterior urethra, prostate and seminal vesicles are almost always infected in long standing cases of tuberculosis testis, the infection traveling by way of the vas deferens. The latter is always more diseased in the lower than in the upper parts, and the process is not continuous, the disease being most likely to be found at the bends. The bladder may become infected from the kidney or from the sexual glands, but the latter form of infection is uncommon. Secondary anterior urethral infections sometimes occur, but are very rare.

Gonorrhea is an important factor in the etiology of genito-urinary tuberculosis, it having been found that gonorrhea precedes tuberculosis in about 33 1/3% of all cases. The prevention of gonorrhea is therefore important in phthisical patients. Trauma is also one of the principal causes of genito-urinary tuberculosis. Kidney tuberculosis is most frequently unilateral, and when both kidneys are involved the infection is hematogenous. Secondary infection of the epididymis from kidney or bladder tuberculosis cannot occur.

The author discusses the treatment of genito-urinary tuberculosis along well recognized lines.

Surgical Interference in Medical Nephritis. REGINALD HARRISON, *American Journal of Urology*, February, 1906.

The condition of the kidney in nephritis may, in many instances, be compared with that of the eye in glaucoma. In acute nephritis the renal substance may be damaged by the excessive pressure caused by the congestion, as the organ is prevented from expanding by its unyielding capsule. In chronic conditions the squeezing exerted by the thickened, contracting capsule may ultimately produce the granular, contracted or cirrhotic kidney. The increased force needed to drive the blood through the contracted kidney, ultimately leads to increase of the general blood pressure and hypertrophy of the heart.

The indications for surgically relieving tension are: "(a), the progressive signs of kidney deterioration, as shown by the persistence or increase of albumen when it should be disappearing from the urine, as in the natural course of inflammatory disorders ending in resolution; (b), suppression of urine or the approach of this state; (c), where a marked disturbance of the heart and circulatory system occurs in the course of inflammatory renal disorders."

In nephritis, if both organs are apparently affected, operation on either kidney will relieve the tension of the other to some degree. Therefore, unless some focal sign points especially to the one side, it is immaterial which kidney is selected. The usual lumbar incision is chosen, the kidney drawn into the wound, and a linear section of the capsule made to the extent of two or three inches. If stone is suspected, the organ may be further explored. A drainage tube is left in contact with the kidney, and the wound closed by suture. In Edebohls' operation of decapsulation the new capsule, which forms under the influence of constant irritation by the urine, is almost sure to be thick and contractile.

Pyelography (Skiagraphy of the Kidney Pelvis When Distended with Collargol). (*Pyelographie-Röntgenographie des Nierenbeckens nach Kollargolfüllung*). F. VOELKER AND A. LICHTENBERG. *Muenchener Medizinische Wochenschrift*, No. 3, 1906.

The authors have made it possible to obtain skiagrams of the kidney pelvis and ureter by introducing ureteral catheters into the kidney pelvis through the cystoscope. The cystoscope was then withdrawn, the patient placed before the tube and a warm 5% solution of collargal (colloid silver) introduced into the catheter with a small syringe. The quantity of fluid needed varied from 5 to 60 c.cm., depending upon when the patient complained of a feeling of tension and slight pain. It is well to give 1-6 grain of morphin hypodermatically one hour before the manipulation. It is necessary to use a good "stop" (Albers-Schoenberg), a two-minute exposure sufficing. A feeling of soreness persists for about a day. Of the eleven cases tried, four failed to give clear pictures. Fat people are poor subjects. If the ureter is to be plainly shown through its entire course, it is better to have a metal stilet in the catheter, as it offers no impediment to the introduction of the collargol solution.

A Study of the Etiology of Floating Kidney, with Suggestions Changing the Operative Technic of Nephropexy. H. W. LONGYEAR. *Detroit Medical Journal*, January, 1906.

Longyear says that floating kidney is due to firm adhesion between the kidney and the ascending colon. He has demonstrated a ligament between these two organs, which he calls the nephro-colic ligament, both in the living subject and in the dissecting room. In cases of movable kidney the ligament is very thick, and the kidney is displaced by traction of the overloaded cecum. All cases of movable kidney, therefore, are accompanied by descent of the cecum and ascending colon. This accounts for the failure of many operations in which only nephropexy is done, because the descent of the intestine has not been taken into consideration. The operation which the author practices, therefore, includes the following two steps:—first, the nephro-colic ligament is fixed into the upper angle of the wound without severing it from the colon; secondly, any redundant mesentery that may be present is fastened to the lower angle of the wound; the latter procedure requires opening of the peritoneum, but this disadvantage is offset by the ease with which the kidney can thereby be handled. As a matter of fact, in some later cases, the author has contented himself with simple fixation of the ligament, without opening the peritoneal cavity. He believes that if the bowel alone be held up, the kidney may be allowed to prolapse without causing any symptoms.

Suture of Heart Wounds. J. H. GIBBON. *Journal of the American Medical Association*, February 10, 1906.

Gibbon makes a third contribution to the subject of penetrating wounds of the heart, reporting his second case of suture, and his first successful one. The patient, a healthy colored man, aged 38, had received a pen-knife wound in the right ventricle of the heart. Hemorrhage had been spontaneously controlled to some extent by pressure of the clot and of the liquid blood in the pericardium, and was readily controlled by digital compression during the operation, although the wound in the external surface of the heart was from half to three-quarters of an inch in length, and apparently it was half as extensive in the endocardium. The heart was held firmly against the pericardial opening with a traction suture of chromicized catgut, and four other sutures introduced with an intestinal needle, closing the whole thickness of the wound in the heart wall. The patient was out of bed in two weeks, and was discharged twenty days after the operation. At present he is well and the heart action is normal. The pleura was uninjured, no osteoplastic flap having been made, but merely excision of the costal cartilage. In a similar case, in future, Gibbon would not attempt to drain the pericardium. The external wound, however, he thinks should always be drained. Whenever there is suspicion of a wound of the heart, exploratory operation should be made. Gibbon advises against any too vigorous stimulation when wound of the heart is suspected.